ast English Library

OCT 4 1926

OCT 5 1926

PAPER TRADE JOURNAL

Vol. LXXXIII, No. 14 SEPTEMBER 30, 1926

Per annum, $4.00
Per copy, 10 cents

UDDEHOLM

BLEACHED SULPHITE

Navigation never closed:
Regular monthly shipments throughout the year

Quality always
dependable and uniform

Sole Agents in U. S. A.:

Scandinavian Pulp Agency, Inc.
342 Madison Avenue
New York

This Illustration Visualizes Forty-seven Years of Progressive Growth and Unsurpassed Achievements in the Production of

EASTWOOD

FOURDRINIER-CYLINDER-WASHER

WIRES

EASTWOOD WIRE MANUFACTURING CO., BELLEVILLE N.J. U.S.A.

Entered as second class matter August 13, 1925, at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. ESTABLISHED 1872 FIFTY-FIFTH YEAR
EXECUTIVE AND EDITORIAL OFFICES: 10 EAST 39th STREET, NEW YORK CITY

Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., E. Stroudsburg, Pa.
CHICAGO: 123 West Madison St., Chicago, Ill.

PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-FIFTH YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., Inc.

LESLIE R. PALMER, President — GEO. S. MACDONALD, Vice-President & Treas. — F. E. HOPPIE, Secretary

Executive and Editorial Offices: 10 East 39th Street, New York

Chicago Office: Room 14, Suite 410, 123 West Madison St.

TABLE OF CONTENTS

Copyright, 1926, by Lockwood Trade Journal Co., Inc.

Cost Association Meets at Holyoke	21
G. H. Gerpheide Heads Hawthorne Paper Co.	24
K. V. P. Co. to Pay Dividend	24
Cost and Technical Men Meet at Three Rivers	24
Inspect Kalamazoo Paper Mills	24
West Coast Paper Co. To Start Building	24
Brighter Outlook for Philadelphia	26
New Mill Products from Garrett Co.	26
Thomas W. Price Co. Issues Catalog	26
Paper Trade Men Meet on Golf Links	28
Mohawk Valley Paper Co. Pump House Burned	28
Speaks at National Safety Council	28
Neenah Mill First in Safety Contest	30
Neenah School Adds Paper Making Course	30
Laurentide Merger Rumors Denied	32
News Print Rushed to Miami	32
Completes Aerial Map of Gatineau	32
I. P. Co. Buys Timber Tract in Louisiana	32
Competition Affects Los Angeles Trade	34
National Paper Troducts Co. To Expand	34
Natural and Artificial Reforestation	36
Underwood Paper Mills Closed for Two Weeks	36
Coated Paper Mill Starts in West Canada	36
Construction News	38
New York Trade Jottings	40
Editorial	**42**
Work of the Paper Imports Committee	43
Cushnoc Paper Corp. Buys Plants	43
Will Not Try to Control News Print	43
Daverin Paper Mills Resume	43
Technical Section	
Penberthy Venturi Drier Circulator	45
Soda Pulp Investigations	47
Salt and Its Effect in Soda and Sulphate Mills	49
Measurement of Surface Temperatures	50
Current Paper Trade Literature	52
Cost Section	**55**
Imports of Paper and Paper Stock	62
New York Market Review	**66**
Miscellaneous Markets	**68**
Market Quotations	**70**

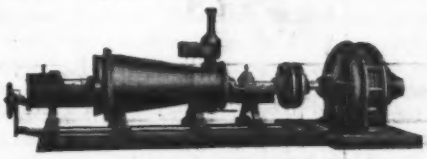
Want and For Sale Advertisements, 72, 73, 74, 75, 76

PROGRESS

During the Middle Ages in Western Europe books were only highly decorated toys. The manufacture of paper was slow in reaching Europe and it was not until the end of the fourteenth century that it was abundant and cheap enough for the printing of books to be a practical business. Then the knowledge of reading spread swiftly and new books were written for ordinary people to read. Then it was that a new and far more vigorous intellectual life began in the world. Paper had made the revival of Europe possible.

Today paper plays an important part in the world's advancement.

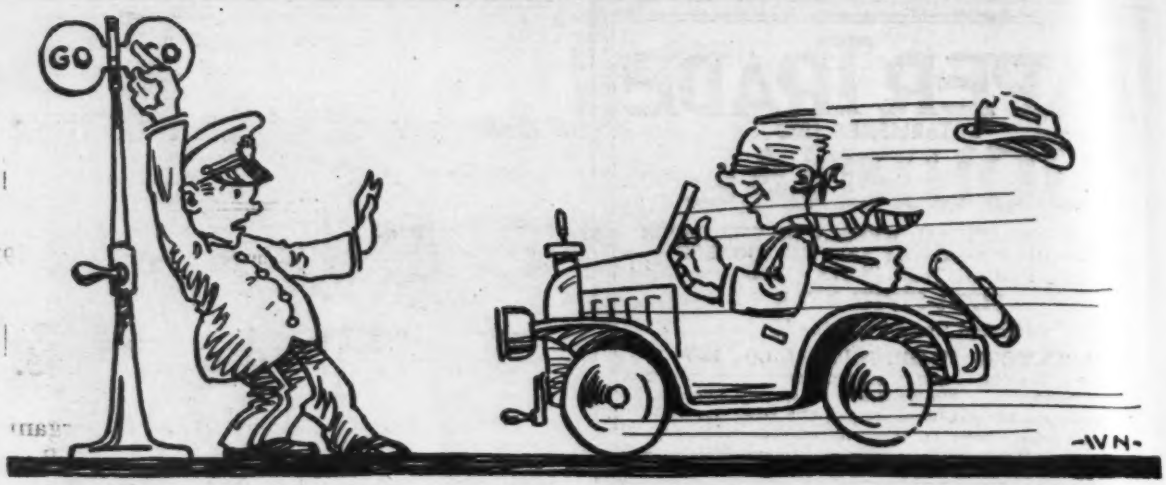
In the making of paper the Appleton Jordan is playing an important part.



Maintenance costs are reduced to the minimum with the BALL BEARING TYPE APPLETON JORDAN ENGINE because ball bearings require but little attention. *5 Points of Improved Jordan Performance*—a folder explaining the advantages of the Ball Bearing Jordan will be sent to you on request.

The Appleton Machine Company

Appleton, Wisconsin



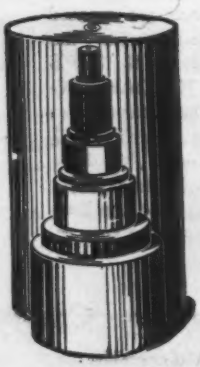
RIDING ALONG BLINDLY IS RISKY BUSINESS

And yet there are certain people who take greater chances than the one pictured above. Take for instance the paper mill owner, the converter, or the paper dealer who use obsolete and inefficient machinery in the manufacture of rolls of paper. They all are in a position to lose a volume of business, which due to past experience had been considered certain.

And not only is there a chance that old customers will trade with a competitor who is equipped to produce rolls of superior quality, but also the fact must be faced that to attract new buyers, the best is none too good.

Why be content to ride along with second rate equipment when there is a CAMACHINE for every roll requirement? With a CAMACHINE you will get better rolls, greater production and at lower cost.

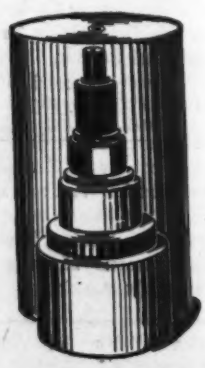
Let us mail you information on a CAMACHINE suited to your work.



CAMERON MACHINE CO.

61 POPLAR STREET,

BROOKLYN, N.Y.



SLITTERS AND WINDERS FOR EVERY ROLL REQUIREMENT

ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

Vol. LXXXIII, No. 14 [redacted] Thursday, September 30, 1926

The Magazine of the Paper Industry

Cost Association Meets at Holyoke, Mass.

John H. Kline, of the York Haven Paper Co., York Haven, Pa., Is Chosen Head of Organization for Ensuing Year—Convention is Well Attended and Is Big Success in Every Respect—Interesting Address Made by Representative Men—Next Annual Convention Is Slated for Detroit, Mich.

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 28, 1926.—John H. Kline of the York Haven Paper Company of York Haven, Pa., was elected president of the Cost Association of the Paper Industry at the closing session of the two days convention held at the Hotel Nonotuck Thursday and Friday of last week. The tentative place of the next September meeting was fixed for Detroit, Mich., providing the necessary arrangements can be made so that the cost men may visit some of the plants having the latest and most up-to-date methods and systems in cost work.

The convention was considered one of the most successful in its history from point of attendance and interest in papers presented. In fact, the discussions were lively and pointed and some keen questioning was indulged in.

Address of Welcome by C. A. Crocker

Registration of delegates occupied the first hour of the session following which the address of welcome was given by Clifton A. Crocker of Springfield, president of the Crocker McElwain Company and Chemical Paper Manufacturing Company of Holyoke. W. C. Scott of the Dill & Collins Company presided at all sessions.

Mr. Crocker stated how very important he considered the work of the cost association. Both his mills had been members of this association since its inception. He also expressed pleasure that there were so many present, some coming a long distance. (Two of the members came from Wisconsin.)

The first paper was to have been read by M. C. Dobrow, assistant secretary of the Whiting Cover and Tissue Paper Manufacturers Association, but he was unable to secure the necessary data for his paper on "Excess Machine Capacity in the Paper Industry." He depended upon data from the Census Bureau at Washington and it was not forthcoming in time.

Budgeting Overhead Expenses

The local committee secured in his place J. Aime Lavallee, Supervisor of Cost Accounting for the Westinghouse Company.

Mr. Lavallee explained in a very careful manner the method that they had drawn up for budgeting their overhead expenses basing it on production data. He gave out a chart showing the basis of budgeting for foremen and assistants, and showed how the curve varied in the production from 16 per cent to below 7½ per cent.

He also explained that his concern made a quantity of different products but was able by this method quickly to pick out those departments in which the budget had begun to be exceeded. The speaker had a very complete knowledge of the subject and was wholly at ease in answering a vol'ey of questions directed at him at the conclusion of his discourse.

Appraisal Work in Paper Industry

The second paper of the morning session was by L. H. Olson, Vice President of the American Appraisal Company of New York City, on "Appraisal Work in the Pulp and Paper Industry." Mr. Olson has spoken before the cost association before and always commands interest and attention. In his paper he stressed the vital necessity for accuracy in appraisal work. He pointed out a number of uses to which the results of appraisal work could be put and showed that costs could not be correctly defined unless certain fixed data were determined. He dwelt particularly on the fact that the information necessary to making proper appraisal was obtained over a series of years. His paper was well received and was followed by a considerable discussion.

Use of Standard Costs

The afternoon session was devoted mainly to the matter of standard costs. The first paper was by Eric A. Camman, manager of the Cost System Department of Peat, Marwick Mitchell & Co., of New York, on "The Uses of Standard Costs." Mr. Camman said that his knowledge of the paper industry was limited and that therefore he must speak in general terms. He had installed cost systems in six or eight different industries and they could be adapted to any industry no matter what problems had to be overcome. Standard costs require the setting up of standards or results of measurements and the working out of the cost systems consisted of figuring ratios of the variances from these standards. The ultimate aim in collecting these cost figures and data was to ascertain where we were losing money or where we could save money by cutting down expenses, the point being that this could be done as well by figuring ratios as by getting actual dollars and cents. He had complete command of his subject and was ready to answer any questions. Immediately following Ralph B. Knott, Cost Accountant for the Eastern Manufacturing Company of Bangor, Me., spoke on "Our Standard Cost System." He illustrated his address by the various forms that were employed in his system, showing how costs were collected and tabulated.

Questions were then directed at both Mr. Camman and Mr. Knott, a large part of the afternoon session being given up to discussions over these papers. A difference of opinion developed over the use of standard costs, Mr. Camman feeling that standard costs could not be developed with a smaller staff and Mr. Knott

claiming that it was possible to reduce the cost staff by adoption of the standard cost system.

An Enjoyable Banquet

A banquet followed at 6:30 o'clock for about 90 members and their lady friends. Col. B. A. Franklin of the Strathmore Paper Company, vice president and first president of the Association presided and a program of entertainment and informal addresses was carried out followed by dancing.

Technical Knowledge for Cost Men

The second day's session began with an open forum conducted by President W. C. Scott on selling and other costs and the treatment of idle time. The first speaker of the session was Miss Helen V. Kiely, Director of the Bureau of Technical Research of the American Writing Paper Company of this city on "Technical Knowledge for Cost Men." Miss Kiely conducted classes last winter for mill workmen for 16 weeks with an average atendance of over 100. She stated that any paper which has to do with as broad a subject must necessarily be more or less superficial unless time be taken in explaining each fact. Either a paper with broad knowledge of facts could be worked out or the work concentrated on one or two facts. She showed that the cost of raw materials was about 50 per cent of the whole cost of the manufacture of paper. Paper is made wholly of one material—cellulose; and she described the different forms in which cellulose is obtained. Like starch it has a great affinity for water. This affinity for water makes the manufacture of the various grades of paper possible. She showed how this affinity for water affected the manufacture of the various grades of paper and how this same affinity made trouble for the printers in causing at times improper registration and curling of the edges of the paper. She told how the use of southern pine had resulted in a long soft fiber that was supplanting more costly woods.

It is necessary to know when moisture tests are made said Miss Kiely whether costs are to be figured on a dry basis or "as received" basis. The importance of the matter lay in the fact that different materials absorbed water differently. Miss Kiely described these conditions in the different materials as wood pulp, fillers, clay, alum, bleach, rosin size and other materials. The necessity of obtaining exact data from repeated experiment for cost bases was brought out in many ways.

Save-All Savings

A. T. Leander of The Dorr Company of New York was unable to be present on accoiint of an accident but in his place came W. B. Geary of the same company who gave a paper on "Save-all Savings." Not so many years have passed since mill owners began to see that some form of "save all" was advisable in the mill processes. There are very few mills now that are not adopting some form of saving the "white water." One point he brought out was that the return of the white water stock to the paper machine had a favorable effect on the product, a better and firmer sheet being produced.

He discussed the importance of cleanliness and the possibilities of contamination in the handling of the white water. There was special danger of contamination in the effluence from sewers and drains and during washups. The process water should be kept entirely pure and free from other mill flows. He recommended that the machine pits be tiled and copper piping used as in a mill in Ohio which he cited. He then gave a number of rules to be followed and told how in special cases by use of the saveall system savings of $1,000 a day had been effected. In many cases the expense of the installation of the "save-all" systems had paid for themselves in three months use.

Dr. Baker Speaks at Luncheon

Col. B. A. Franklin presided at the luncheon at 12:30, the speaker being Dr. Hugh P. Baker, executive secretary of the American Pulp and Paper Association of New York City. Dr. Baker reviewed the history of pulp and paper making in New England since its beginnings and described the uphill fight that the early manufacturers were compelled to make; he said that the leaders in the industry are just as aggressive and just as energetic and capable today as were those in the pioneer days of the industry; and they were just as determined to solve the problems confronting them as in the older days.

How Mills Have Reduced Insurance

The first speaker at the afternoon session was Reed B. Timmons, insurance adviser, on "How Some Mills Have Reduced the Cost of Their Insurance." Mr. Timmins had early experience in the paper industry before taking up insurance and so is able to get the manufacturer's angle on the question. Are your manufacturing costs too high? As a result of his talk Mr. Timmins was in receipt of a large number of concrete questions which he was able to answer satisfactorily. Mr. Timmins is not a broker in any sense but attempts to work in an advisory capacity to the manufacturers and on friendly spirit towards the insurance brokers.

He opened his talk by saying that insurance in industries particularly the paper and pulp manufacturing industry, was a sort of foot ball that was kicked along from department ot department and generally wound up in the accounting department where it naturally did not receive the attention that it deserved. Anybody who has examined the statements put out by the insurance companies must have noted the great increases in business, this being because of the great increase in business in general the past decade; business itself has become more complicated as a result of this big increase. In other words insurance has now arrived at a point that it demands the attention of a man trained in such matters and should not be left to an employe withoutt raining or experience.

Mr. Timmins went on to point out that the cost of compensation insurance for the employee was the highest in the paper industry than almost any other when the reverse ought to be true. This can be lowered by plant experience and he illustrated the point by citing two mills nearly equal with same number of employees, same product same type of machinery but with different amount of plant experience with the result that the insurance of one mill cost $28,000 more annually than the other. He called attention to the large number of cases produced one way or another through infection. The type of cases of aggrevation, by which some physical trouble that a man has is aggravated by accident was touch on and he told how such cases should be handled. Manufacturers have been able to reduce the time lost by taking proper measures to less than one half a day per year per employee. This has been accomplished simply by finding out what was wrong and correcting it. Careful audits, the reading of insurance policies with great care were urged. Some policies as they read he found to be totally or partially void. A particularly live discussion followed in which Seth L. Bush said that statements by Mr. Timmins checked up in many points with his own experiences.

Address by Mr. Burke

The last speaker was Thomas J. Burke, secretary treasurer of the association who gave a talk on "The Value of Balance Sheet Ratios to Our Industry." Much of this address related to ratios obtained from balance sheets submitted by different mills totalling 60 concerns and being sheets as of Dec. 31, 1923, 1924 and 1925. His summary is shown in the table appended.

COST ASSOCIATION OF THE PAPER INDUSTRY

ASSETS — COMPOSITE BALANCE SHEET

	1923	1924	1925	% to Total Assets, 1925 High	% to Total Assets, 1925 Low
Cash	3.42	2.89	2.10	16.01	.09
Receivables (Net)	10.22	7.73	7.08	33.39	2.84
Inventories	20.40	18.06	16.29	51.59	4.65
Miscellaneous	1.00	.69	3.02	23.49	....
Securities, etc.	6.66	6.14	6.15	34.97	....
Total Current Assets	41.70	35.51	34.64	78.78	9.40
Fixed Assets (Net)	56.28	61.42	61.97	89.57	20.57
Deferred Charges	2.02	3.07	3.39	20.27	....
Total Assets	100.00	100.00	100.00		

(Continued on page 28)

MATHIESON Chemicals

Mathieson Traffic Service

THE complicated industrial structure of today has made transportation one of the foremost problems with which industry has to contend. Expert traffic counsel has become essential to the prompt and efficient handling of freight movements.

In the chemical-consuming industries in particular, where highly technical materials are dealt with, the traffic expert is indispensable. Yet comparatively few consumers would be justified in maintaining a traffic department of their own in order to keep fully informed on traffic matters.

It is for this reason that the Mathieson organization includes a full staff of traffic experts for the service of all customers. Questions of freight rates, routings, tracing and expediting of shipments, claims against carriers, etc., are all handled for Mathieson customers by our well organized Traffic Department. Our staff welcomes the opportunity of assisting customers with their traffic problems and is on the alert at all times for traffic changes which might affect their interests, whether or not such changes have any direct connection with Mathieson products.

Consumers should give careful consideration to the advantages of Mathieson traffic before seeking a source of supply elsewhere.

The MATHIESON ALKALI WORKS Inc.
250 PARK AVE. NEW YORK CITY
PHILADELPHIA CHICAGO PROVIDENCE CHARLOTTE

Caustic Soda ~ Liquid Chlorine
Bicarbonate of Soda
Anhydrous Ammonia

EAGLE THISTLE PRODUCTS

Soda Ash ~ Bleaching Powder
Modified Virginia Soda
Aqua Ammonia

Deal Direct with the Manufacturer

Geo. H. Gerpheide Heads Hawthorne Paper Co.

Vice President of Allied Paper Mill Chosen To Succeed A. H. Dwight—Kalamazoo Vegetable Parchment Co. Declares Dividend of 1½ Per Cent on $3,000,000 Common Stock, Payable Oct. 1, 1926—Cost and Technical Men of Kalamazoo Valley Meet

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., September 26, 1926.—George H. Gerpheide, first vice president of the Allied Paper Mills, has been elected president of the Hawthorne Paper Company and will take office October 1, filling the position left vacant by the death of the late A. H. Dwight. Mr. Gerpheide was the unanimous choice of the board of directors as just the man needed to handle the affairs of the concern at this time.

His rise in the paper industry has been rapid and sure. He was at one time a member of the Bardeen Paper Company's staff and when that company was absorbed by the Allied Paper Mills, he was made first vice president of the big organization and right hand man to President A. G. Gilman.

There have been many changes in Hawthorne Paper officialdom in the past year. It was in September, 1925, that A. H. Dwight was stricken with apoplexy and forced to abandon his duties as president. On the death of Mr. Dwight, Robert L. Pease, vice president and secretary, was in line for advancement, but with A. G. Wightman, he went to the Knowlton Brothers plant at Watertown, N. Y.

It was about a year ago that Horace M. Gimlin came to Kalamazoo and was named vice president and director of sales. He has since resigned to accept a Pacific coast sales agency for a large paper concern. F. C. Clark, who came to Kalamazoo from Maine at the request of Mr. Dwight was in turn secretary and vice president of the Hawthorne Paper Company, until July, when he resigned to purchase with R. S. Hatch the plant of the East Hartford Manufacturing Company at Burnside, Conn.

Kalamazoo Vegetable Parchment Dividend

A dividend of 1½ per cent on the $3,000,000 common stock of the concern outstanding, has been authorized by the directors of the Kalamazoo Vegetable Parchment Company and ordered paid October 1. This is the first dividend paid for a period of fully 18 months by this concern.

The erection of the company's new mill and the successful operation of this unit have raised some serious problems, all of which have been met and difficulties surmounted. The big high speed, 164 inch Bagley and Sewell machine, was an innovation and the operators of the K.V.P. are credited with doing some real pioneering in the paper industry in the successful manufacture of high grade paper on a high speed machine.

Earnings have been very satisfactory during 1926, and while no official statement as to the company's financial condition is forthcoming, it is reported on what is believed to be excellent authority that within the past nine months period, the company has accumulated a considerable surplus and at the same time paid off indebtedness due the banks. For several years the K.V.P. earned 6 per cent dividends annually on its common stock. It is expected these payments are now to be resumed permanently.

Inspect Kalamazoo Paper Mills

Inspection of Kalamazoo's paper mills and other diversified industries was made Wednesday, Sept. 22, by a party of officials of the Chicago and Eastern Illinois railroad, headed by E. S. Stephens, general freight agent with offices in Chicago. Mr. Stephens explained that the present paunt was strictly educational in nature and covers the industries of Kalamazoo and Grand Rapids, particularly paper and furniture.

The party registered Tuesday night at the Park-American and devoted all of Wednesday to their stay here. They lunched at the Kalamazoo Vegetable Parchment community house. In addition to Mr. Stephens, the party included H. J. Dentzman, assistant general freight agent at St. Louis and M. F. Enright, East St. Louis; N. C. Calvert, Dallas; J. D. Beeler, Evansville; L. B. Grantham, Little Rock; D. W. Agnew, Memphis; Ashley Johnson, Shreveport; R. D. Dirhold, Tulsa, and J. E. Whittemore, Grand Rapids, all general agents of the line.

Cost and Technical Men Meet

The regular meeting of the Cost and Technical Association of the Paper Industry, Kalamazoo Valley local branch, was held Wednesday afternoon and evening at the Country Club, Three Rivers. Opportunity was afforded those who wanted to play golf or visit the mills of the Eddy Paper Company.

The dinner was served at 6:30 eastern standard time. There were talks by L. P. Sullivan and Paul Ulrich of the Eddy Paper Corporation. The former spoke on "Distribution of Power Cost."

H. G. Crockett of Scovell Wellington and Company, New York City, discussed "Standard Costs." He has had much experience in installing those systems in eastern mills.

It was expected originally to have T. C. Powell and J. B. Ford, respectively president and vice president of the system, with the party, but at the last moment a business session in Chicago demanded their presence there.

Kalamazoo Paper Co. Has Fair

Employees of the Kalamazoo Paper Company have the past week staged their fourth annual fall fair, an event devoted almost wholly to the display of garden products, grown in the gardens of the workers, or to articles made personally by these operatives. Housed in the mill's social room, it is indeed a most creditable exhibit.

The garden products included an attractive outlay of fruits and vegetables and canned goods. Two large tables were devoted to embroidery, crochet work, tatting and other fine examples of the art of the needle. There were over 40 individual entries in this department and fully 200 pieces of work were shown.

An excellent example of cabinet work was found in three pieces of furniture made exclusively from the walnut backs of coating brushes. J. C. Estes of the No. 5 mill is the craftsman in this case. Mrs. William Miller of the No. 3 mill made wicker trays and servers with glass bottoms, that would do credit to any establishment.

Certain novelties not competing for prizes are found in examples of bed spreads over 100 years old, knitting of the early 1800s, interesting old volumes and other family heirlooms.

Prof. W. E. Praeger of Kalamazoo College and Mrs. Nola Z. Snyder of Gilmore Brothers judged the displays. The prizes of $10, $5 and $3 in each of the three classes will be awarded at the company's annual winter picnic.

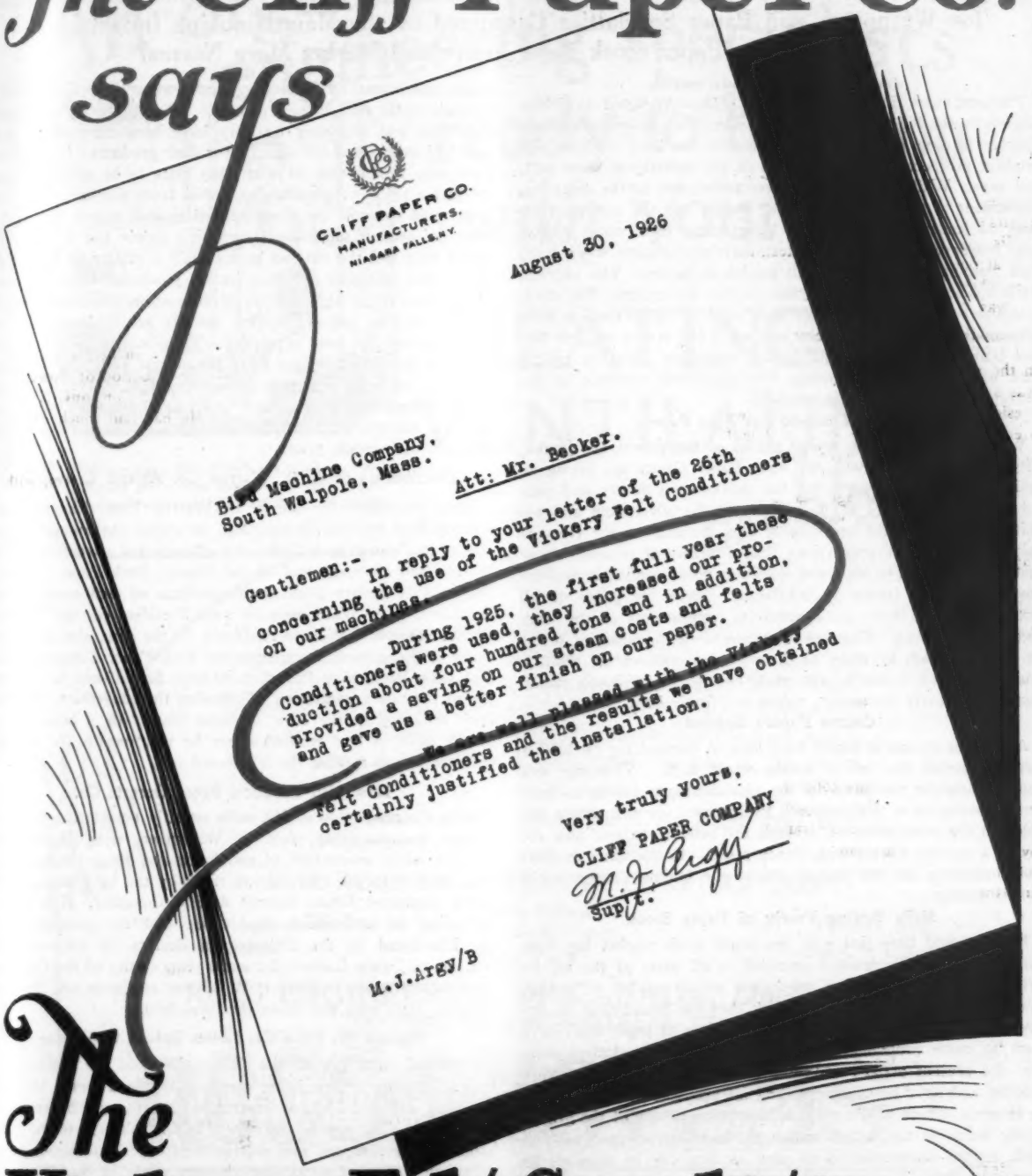
West Coast Paper Co. To Start Building

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 25, 1926.—H. S. Giles, secretary and treasurer of the West Coast Pulp and Paper Company, Olympia, has announced that the first building of the company on its site at Tumwater will be started soon, and that production will start in 1927. The first unit of the building program will cost about $50,000 exclusive of equipment; a large paper machine for the manufacture of a fine grade of paper will be installed.

It is four years since this company took over the plant of the old Olympia Brewing Company, and for some time crews have been at work clearing away buildings that could not be used, together with old machinery and equipment.

The Cliff Paper Co. says



CLIFF PAPER CO.
MANUFACTURERS.
NIAGARA FALLS, N.Y.

August 30, 1926

Bird Machine Company,
South Walpole, Mass.

Att: Mr. Becker.

Gentlemen:-

In reply to your letter of the 26th concerning the use of the Vickery Felt Conditioners on our machines.

During 1925, the first full year these Conditioners were used, they increased our production about four hundred tons and in addition, provided a saving on our steam costs and felts and gave us a better finish on our paper.

We are well pleased with the Vickery Felt Conditioners and the results we have obtained certainly justified the installation.

Very truly yours,

CLIFF PAPER COMPANY

M. J. Argy
Supt.

M.J.Argy/B

The Vickery Felt Conditioner

Of 350 sold 223 represent repeat orders

260

Bright Outlook for Philadelphia Paper Trade

Many Substantial Orders Booked for Various Grades of Fine Papers—Distribution Broadening for Wrappings and Paper Specialties Consumed by the Manufacturing Industries—Demand for Paper Stock More Active and Market More Normal

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 27, 1926.—Attracted to Philadelphia by the big fight, many paper men from all sections of the country learned from their associates in the local trade of the brighter prospects which now loom in the industry in these early fall days. While the week was less active, due to the diversions co-incident to the Dempsey-Tunney match, and the call upon the time of leaders of industry in entertaining their many visitors who journeyed here for the contest, there nevertheless was a fairly well maintained demand for all grades of papers. The previous week was an especially prosperous one for the dealers. The ready response to the sales appeals of their staff of representatives when making the rounds of the city and state for orders of both fine and coarse grades and requests for immediate deliveries on the part of the consuming trades, was gratifying evidence of the betterment now swaying the market.

Broader Demand For Fine Papers

With orders increasing for all grades of fine papers, the Quaker City dealers affiliated with the Fine Paper Group are taking an optimistic attitude toward the fall markets. Printers and publishers and consumers of fine papers in the advertising and advertising-printing field are coming into the market for frequent shipments of larger proportions than for several months. Now that all signs point to improved conditions more confidence is demonstrated in the future by substantial orders for paper of all grades including those for commercial requirements of the office and printed matter. With the exception of the lowering of prices on sulphite bonds by many of the standard mills of the country, which followed a similar cut made by the Pennsylvania manufacturers in early September, values are firmly held.

Coarse Papers Expand

All grades of coarse papers have been in demand for the brisker business period that set in within recent days. Wrappings and paper specialties consumed by the manufacturing industries have been broadening in distribution. Preparation for the winter has aided in the stimulation of demand for building papers, now enjoying a normal market with steady prices. Composition roofings and sheathings are the leaders among the building paper stocks at this season.

Mills Buying Freely of Paper Stock

For the first time this year the paper stock market has been notably active, with demand extended to all parts of the nation. With outside mills heavier purchasers of all grades of stocks, prices are now more normal. Now that the broadening of demand has extended outside of the state, values of paper stock have risen to more profitable business standards. The dealers state that the present activity indicates mills are stocking for future supplies and have been accumulating all available stocks that can be secured. There has been no accumulation of any of the grades in the hands of the dealers within recent weeks, shipments being made to the manufacturers as soon as they can be acquired by the wholesalers. The paper stock market has reached more normal levels after a year of low prices with steady demand from local manufacturers. Most of the present business is being contracted with outside mills who are willing to pay the higher values and are experiencing difficulty in securing many of the grades that have been in active demand throughout the year among the lower priced stocks.

Dealers Now Buying From Mills

With the increased demand for paper, local dealers are now seeking larger shipments from the mills. Manufacturers have begun operations on a broader scale, after part time schedule throughout the mid-summer months. All mills within the Quaker City area and adjoining territory have been experiencing a renewal of the normal fall demand for their products. Local dealers have been complaining of what they state to be an unwarranted cut in the prices of glassines by a mill from another state. With local mills oversold on glassines and enough orders on hand to keep the present schedule of operation steady for the next few weeks they feel the cut has been merely a matter of competition rather than necessity. Dealers having purchased their fall supply of glassines at the higher prices of the summer months are stocked at these values and regret that inroads are made at this time when demand has been expanding. They believe the cut inopportune and state that it may have an adverse effect in postponing purchases with the consumer anticipating still further reductions. Board manufacturers have been enjoying continuous activity, paper box manufacturers having enjoyed a fairly good early fall business, with steady prices.

Distributors of S. D. Warren Co. Attend Convention

Local distributors of the S. D. Warren Paper Company who journeyed to Poland Springs, Me., to attend the annual convention of the company included the officials and executives of the D. L. Ward Company and of the Charles Beck Paper Company, Quaker City dealers stocking the products of that manufacturer. Representing the Ward company were President George W. Ward, W. W. Seary and William A. Hentz, of the firm, and Thomas J. Curry of the sales staff and from the Beck Paper Company, President Leon Beck, Vice President Andrew Simon, and G. P. Johnson of the sale organization. Following the convention, President Beck remained in the New England States for a business tour of the mills in that section, where he will remain for the next ten days before making the homeward trip.

New Mill Products From Garrett Co.

With the completion of the mills recently reconstructed from a former manufacturing plant at Willistown, near Upland, Pa., and the initial production of manila tissues, these products have been offered to the Philadelphia trade by the proprietors of the newly organized Edwin Garrett & Son Company. The firm is producing an anti-tarnish rope tissue and the product is being introduced to the Philadelphia dealers by Ellwood Garrett, son of Edwin Garrett, for many years owner of the Granogue Mills, recently sold to Herbert W. Mason, of Curtis and Brothers, Newark, Del., who will cover the local field.

Thomas W. Price Co. Issues Special Catalogue

A special catalogue to list the products of the Hammermill Paper Company is now being prepared by the Thomas W. Price Company, 5th and Ludlow streets, and shortly will be ready for distribution. The new catalogue will be a supplement to the others issued by the company and will be sent out simultaneously with a revised price list containing changes made in the list issued last November and readjustment to present day values. The company has added the Cyldesdale bonds, an especially high grade quality of bond, for which it is sole local distributor. President Thomas R. Fort, Jr., of the firm, attended the recent convention of the Hammermill Company at Erie.

Innovation in Sampler

Under the caption "Silent Salesman of The Paper House of Pennsylvania" a new type of sampler of the various lines of fine papers handled by the Paper House of Pennsylvania has been com-

An organization of engineering specialists ready to help you with your HEATING and VENTILATING problems!

Discussing your problems with our engineers puts you under no obligation. We welcome an opportunity to serve you.

The Ross organizations were the first, and are today the foremost organization of engineering specialists devoting its entire time and effort to the proper heating and ventilating of Paper Mills. Years of research and experience gained in hundreds of installations and special tests have provided a wealth of valuable data covering nearly every conceivable heating and ventilating problem in the Paper Industry.

This specialized service is maintained for Paper Mill men. Use it! Profit by it!

Use This Memo

J. O. ROSS ENGINEERING CORPORATION

549 W. Washington Blvd.
CHICAGO

Main Office
30 E. 42nd Street
NEW YORK

1117 Tacoma Ave.
TACOMA, WASH.

ROSS ENGINEERING OF CANADA, *Limited*
NEW BIRKS BUILDING, MONTREAL

ROSS SYSTEMS
HEATING—VENTILATING—DRYING

MEMO: for your secretary **Write J. O. Ross Engineering Corporation, 30 E. 42nd St., New York, to have their engineers discuss with us methods for cutting our production costs. It is understood that this request puts us under no obligation.**

piled and sent to its patrons. With a view to giving a compact and efficient sample paper service, the Paper House has compiled under single cover an attractively and concisely arranged list of its stock papers. Covered with Venetian Leather binder, the samples of the various marks and grades carried in stock are compiled in loose leaf form for ready adjustment to new items and changes thay may follow. The loose leaf sampler measures 5 by 8 inches, and contains a pocket for current price lists. The back part of the booklet holds in a pocket self addressed envelopes of the Paper House ready for mailing to the order department. The loose leaf sampler contains the Strathmore, Glatfelter, Champion, Coated, Woronoco and Reading Paper Mills brand of papers and others handled by the firm.

Paper Trade Association Meets on the Golf Links

With wide open hospitality and the goodfellowship of friendly contests, the Philadelphia Paper Trade Association entertained associates in the industry during the week in the annual fall tournament on the golf links of the Manufacturers Country Club, at Orland, Pa. An ideal day and the splendidly arranged and spacious golf grounds of the luxurious Manufacturers Country Club were inspirations for brilliant playing on the green with the local paper men as hosts to manufacturers and distributors from as far west as Kalamazoo east to Boston, north to the Maine Coast and south to Richmond and all in joining the social diversions and sporting events of the program with enthusiasm and comraderie for which these annual gatherings are noted.

With 45 paper trade golfers assembled on the links, and with as many more associates as spectators to the lively contest, the Paper Trade Golf Association made record history for a brilliant matching of skill among its membership. Among those whose accomplishments on the links won for them the laudations of their fellows in the two days playing of September 21 and 22 were Roger Taft, winner in the low net score; Alex Gillman, of the Allied Paper Mills, Kalamazoo, Mich.; W. W. Loveland; W. W. Langtry, of the District of Columbia Paper Company, Washington, D. C.; and George Cadwell, of the American Writing Paper Company, Holyoke, Mass., along with the other winners of the various classes.

In the Wednesday schedule was recorded the match plays that followed the qualifying rounds of the previous day and in the evening a banquet in the dining hall of the Manufacturers Club. With Eugene W. Fry, president of the Jessup and Moore Paper Company, as toast-master, a word of welcome was extended to the membership and the visiting associates in brief but warm expressions of hearty appreciation of the interest displayed by such a large representation of golf enthusiasts from the ranks of the industry, and pleasure of the local paper men in extending hospitality to the out of town visitors.

Winners in the Contest

Kickers Handicap—William Anders, Perkins-Goodwin Company, New York, score 73.

Low Net Score, 82-6-76—Roger Taft, Hammermill Paper Company, Erie, Pa.

First Eights:

1-J. B. Berrien, Union Bag and Paper Corporation, Philadelphia.

2-R. F. Chapin, Millers Falls Paper Company, Millers Falls, Mass.

3-S. C. Willey, Atterbury Brothers, New York.

4-S. A. Bendict, Jessup and Moore Paper Company, Philadelphia.

5-W. W. Pringle, Seymour Paper Company, Philadelphia.

Defeated Four of the Second Eight:

1-Harrison Baldwin, Hammermill Paper Company, Erie.

2-Louis Calder, Perkins Goodwin Company, New York.

3-Oswald Marquard, Marquard, Blake and Decker, New York.

4-W. W. Loveland, Watervleit Paper Company, Watervleit, Mich.

COST ASSOCIATION MEETS

(*Continued from page 22*)

LIABILITIES					
Payables (Unsecured)	10.81	6.54	7.34	56.97	.80
Payables (Secured)	2.11	1.54	3.18	7.92	....
Miscellaneous	1.20	1.08	.82	11.88	....
Total Current Liabilities	14.12	9.16	11.35	58.25	2.41
Fixed Liabilities	10.14	15.05	23.34	67.24	....
Total Liabilities	24.26	24.21	34.69	71.40	2.44
Net Worth	75.74	75.79	65.31	97.56	28.60
Total Liabilities	100.00	100.00	100.00		

Totals 1925—(53)

Total Assets	$315,382,461.00
Total Liabilities	109,412,018.00
Total Net Worth	205,970,443.00
Total Fixed Assets	195,421,646.00
Total Current Assets	109,244,559.00

Average Ratios 1925

Current Assets to Current Liabilities
305 100

Inventories to Receivables
230 100

Net Worth to Fixed Assets
105 100

Net Worth to Total Liabilities
188 100

Prepared by Thomas J. Burke, C.A., Secretary-Treasurer, Cost Association of the Paper Industry, 18 East 41st St., New York City.

Trips to a number of the paper mills were a feature of the convention much appreciated.

The reception and entertainment committee were:

Seth L. Bush, Manager, Research Department, Crocker-McElwain Company and Chemical Paper Manufacturing Company, Holyoke, Mass.

James A. Reilly, Manager, Cost and Inventory Department, American Writing Paper Company, Holyoke, Mass.

R. M. Mudgett, Strathmore Paper Company, Mittineague, Mass.

John H. Karges, C. H. Dexter & Sons, Inc., Windsor Locks, Conn.

J. Walcott, Crane & Co., Dalton, Mass.

A. Cummings, U. S. Envelope Company, Springfield, Mass.

Arthur Beston, Holyoke Card and Paper Company, Springfield, Mass.

Mohawk Valley Paper Co. Pump House Burned

LITTLE FALLS, N. Y., September 25, 1926.—The pump-house of the Mohawk Valley Paper Company, located on the bank of the Mohawk River was completely destroyed by fire early this week. The blaze was discovered early in the morning at a time when the building was locked and it is thought the trouble may have been caused by defective wiring. While the main plant was in operation at the time the fact that the pump-house is located a considerable distance away allowed the blaze to gain much headway.

Efforts made to save the building were unsuccessful and it was totally destroyed together with the machinery which included several motors. The loss is estimated at $10,000 and is partly covered by insurance.

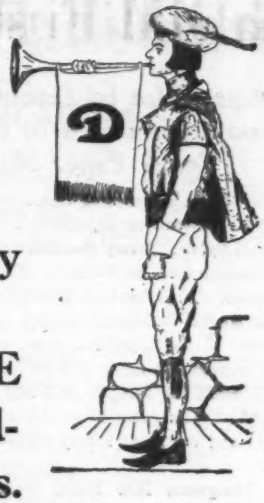
The pump-house was used to pump water from the river to the mill where it was used for manufacturing purposes. To meet the emergency caused by the destruction of the pumping equipment the company is now getting water from wells located on the property but which have not been used in some time. A shortage of water following the destruction of the pumping plant forced a reduction in operations at the paper mill which condition, however, will only be temporary. The destroyed building will be replaced and new equipment purchased. Work has already started.

Speaks at National Safety Council

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 16, 1926.—C. W. Morden, assistant manager of the Crown-Willamette Paper Company, was one of the speakers on the program at the industrial sessions of the National Safety Council held in Portland the first week in September. This meeting was under the supervision of the Oregon and Columbia Basin division of the Council, and was attended by 150 executives prominent in industrial management in the region. W. H. Cameron, managing director of the National Safety Council was one of the inspirations of the program.

Your Paper is Made in Your Beaters



When you buy Beating Engines why not buy the best?

The Dilts approved NEW TYPE Beater is an improvement over standard Hollander type beating engines. It is a faster circulating beater, handles heavier stock, and requires no more power. The tub is iron, designed to save time and power, and the bottom is the "self-dumping" style, inclined and built of concrete. Emptying valve operated from outside the tub with a lever. Roll of bandless type, if desired, with four cast steel heads and with heat-treated alloy steel fly bars. Lighter bar supported in Dilts patented rigid stands, spring cushioned if desired, and carried in water-chambered, rocker type bearing boxes. All the Dilts improvements and with 50 years of Dilts experience back of them. That is the Dilts approved NEW TYPE Beater.

You should buy the best beating engine possible because "your paper is made in your beaters."

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

Neenah Mill First in National Safety Contest

Honor Competed for by Seventy-Eight Paper Mills in United States and Canada—D. C. Everest of Wausau, Interested in New Longview Mill Project—Neenah Vocational School To Teach Paper Making—Developments at Fox River Valley Mills

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 25, 1926.—First place in the safety contest conducted by the Safety Council of Chicago among paper mills has been awarded to the Neenah mill of the Kimberly-Clark Company, Neenah, Wis., according to an announcement just issued. Arthur Redlin is superintendent of this plant. Seventy-eight paper mills of the United States and Canada were competing for first honors but there was no question as to the choice of the winner because the Neenah mill had no accidents whatever during the contest. The prize is awarded to the mill having the fewest accidents and the most safety equipment as a preventative of accidents.

New Longview Mill Plans Near Completion

Architect's plans will be completed soon at Kaukauna, Wis., for the new mill of the Longview Fibre Company, to be erected at Longview, Wash. This work is being done at the office of the Thilmany Pulp and Paper Company, of which M. A. Wertheimer is president. He is one of the men interested in the new project, as is D. C. Everest of Wausau, Wis., president of the Ontonagon Fibre Company of Ontonagon, Mich., and secretary and general manager of the Marathon Paper Mills Company of Rothschild, Wis. The investment in the Longview mill will be $2,500,000 for the production of pulp and paper. The mill will employ about 400 persons and will have a capacity of 100 tons of pulp products daily. Construction is to start this month on a tract of 180 acres of land on the Columbia river. The mill is expected to be in operation within twelve months.

Employes Association Keeps Tenth Anniversary

Commemorating the tenth anniversary of the founding of the organization, the Employees Benefit Association of the Consolidated Water Power and Paper Company held a banquet on September 23 in the Rose room of the Hotel Witter at Wisconsin Rapids, Wis. Present and past trustees representing the employees of the company's mills at Wisconsin Rapids, Biron, Stevens Point and Appleton, Wis., attended. The Ahdawagam Paper Products Company also was represented.

George W. Mead, president of the Consolidated company, gave the principal address. Other speakers were Dr. Don Waters, Fred Eberhardt, past superintendent of the association, and Walter Mead, the present superintendent. C. E. Jackson was the toastmaster.

This is a voluntary co-operative association of the Consolidated company employees and was established in August, 1916. It provides compensation for disabilities incurred off duty, and thus not provided for under the state industrial compensation law, and for the payment of death benefits. Nearly all permanent employees of all the mills are in its membership. Death benefits during the ten year period have been paid out in 23 cases, at $1,500 each, and the total benefits paid amount to $67,000.

Name Country Club After George A. Whiting

When the Stevens Point Country Club, Stevens Point, Wis., completes its new nine hole golf course, the name of the organization will be changed to the Whiting Country Club. This will be done because of the generosity of George A. Whiting, of Neenah, Wis., principal owner of the Whiting-Plover Paper Company, Stevens Point, Wis., and president of the Whiting Paper Company of Menasha, Wis. He has donated $5,000 toward the development project and the club name is to be changed in appreciation of what he has done.

Several years ago Mr. Whiting provided the major financing for a new hotel at Stevens Point, which is named the Hotel Whiting. He recently gave a tract of land to Lawrence College, Appleton, Wis., and was honored when the tract was converted to an athletic field and christened George A. Whiting field. Mr. Whiting is at present confined at St. Luke's hospital, Chicago, where he is receiving treatment.

Increased Valuation of Wisconsin Utilities

Valuation of the holdings of the Wisconsin Traction, Light, Heat and Power Company of Appleton, Wis., which furnishes the major portion of the paper mill power in the central Fox River Valley, has jumped an even million dollars since the year 1925. This increase was revealed in reports just issued by the Wisconsin Tax Commission. The Wisconsin Valley Electric Company, which likewise is in a paper mill area, has an increased valuation of exactly half a million dollars. The former concern will pay taxes of $126,081.36 this year and the latter, $89,657.86. Valuation of the Appleton utility is placed at $6,750,000 and that of the Wisconsin Valley company at $5,800,000. Improvements amounting to $100,000 have been completed by the Wisconsin Traction, Light, Heat and Power Company.

Neenah School Adds Paper Making Course

The Vocational School at Neenah, Wis., is one of the educational institutions of the Fox River Valley that is adding a paper making course to the curriculum of the evening classes. The subject of pulp wood manufacture also will be taken up under the direction of Carl Christensen, director.

A Comprehensive Paper Making Library

Arthur McArthur, director of educational welfare work for the Kimberly-Clark Company, Neenah, Wis., has had commendable success in gathering together a library on paper making, according to statements he made at an address before the Kimanic Club at Appleton, Wis. He found that although paper making was one of the oldest industries, there was no complete source of study and reference. He now has 700 bound volumes dealing with paper making alone, and a card index of over 2,000 references on this subject.

Changing conditions in the paper industry make it necessary to continually teach the men new methods, he declared. Workingmen greet the classes eagerly and usually prove apt pupils. The most difficult pupils are college graduates, Mr. McArthur finds, because they first must be weaned from the idea that they are masters of the paper craft due to what they have learned in school. They must be shown that experience alone is the most competent teacher in this industry.

Mill Worker Burned Badly

Joseph Marchant, 27, employed at the Hoberg Paper and Fibre Company, Green Bay, Wis., was burned badly on the hand and foot in a recent accident. An electric switch short-circuited when he attempted to throw it into contact, and he suffered the burns as a result.

Paper Jobber Celebrates Anniversary

Congratulations from many paper manufacturers came to Otto P. Schlafer, president of the Schlafer Hardware Company, Appleton, Wis., last week, when he celebrated the fiftieth anniversary of his entry into this business. During that time he has built up an extensive jobbing business in paper mill supplies and accessories, making this an important adjunct to his hardware business. He has the largest hardware store in Central Wisconsin.

163 Years of Crane Satisfaction
That's One User's Endorsement

Working their cranes most of the time on rapid bucket work but with plenty of hook loads and switching of cars thrown in, this user's Brownhoists show a total of over 163 years of service.

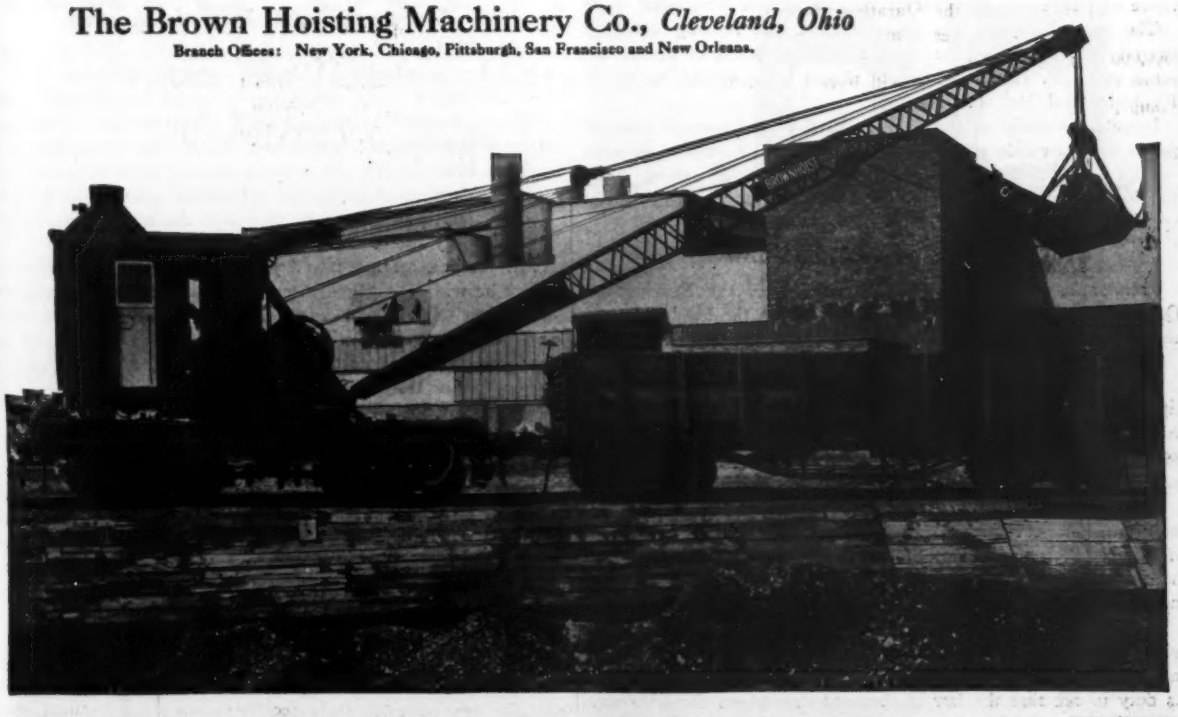
When you consider that these cranes range from 8 to 16 years old and are all still in good working condition, you get an idea of the service users receive from their Brownhoists. Working as a link in a production chain it is of primary importance that a crane stand up and that's what Brownhoists are built to do.

Whatever kind of materials you handle—sand, gravel, stone, coal, iron or scrap—a Brownhoist can effect real savings for you. Maybe a creeper crane will do your work, or perhaps an eight-wheeler will be needed, anyway you can choose from a complete line of Brownhoists. Whenever you're ready we will be glad to help you lick your handling problems.

A modern 25-ton capacity Brownhoist with Brownhoist Clamshell.

The Brown Hoisting Machinery Co., *Cleveland, Ohio*

Branch Offices: New York, Chicago, Pittsburgh, San Francisco and New Orleans.



BROWNHOIST

GOOD MATERIAL HANDLING MACHINERY

Laurentide Merger Rumors Officially Denied

Company Not Considering Selling Out or Amalgamating, According to President George Chahoon—Sunday Labor Law To Be Enforced in Paper Mills of Quebec—Belgo Mill Rushes News Print to Florida to Assist Tornado-Stricken Area—Windsor Mill Extension

[FROM OUR REGULAR CORRESPONDENT]

At the annual meeting of the Laurentide Company, held in Montreal during the week, George Chahoon, Jr., president, took the opportunity of denying the current rumors as to the possibility of the company selling out or entering a merger. He said:

"There have been rumors around the Street about Laurentide merging with other companies, or the possibility of the company selling out to somebody else. It seems to me only fair to state to shareholders that there have been no negotiations of any sort. No one has approached us either to amalgamate or sell out."

Commenting on the operation of the company during the past year, he stated that it had been possible to operate the mills at full capacity, and although in the latter half of the year there was a reduction in the selling price of paper, profits were well maintained. The company had experienced a successful year, as it had escaped any damage from forest fires and woods operations were carried on in a highly satisfactory manner. He did not want to prophesy anything for next year, but there was sufficient business ahead to run the mills at full capacity for the remainder of the year, and he had no doubt the company would receive a fair share of business on the renewal of contracts in November.

The annual report was accepted and the retiring directors elected without change, an expression of deep regret at the absence of C. R. Hosmer through illness being voiced by W. B. Blackader and Mr. Chahoon.

Despite the denial of merger negotiated the advance of some 30 points in Laurentide stock was maintained, and a further advance of 3½ points to 108½ was recorded at the time of writing, while the local press stated that "merger possibilities are still looked upon as favorable."

To Enforce Sunday Labor Law

Premier Taschereau, as Attorney General of the Province of Quebec, has forwarded the following letter to the heads of pulp and paper and other large industries in the Province:

"Dear Sirs:—

"You will remember that on 21st of May last, a special commission appointed by the Government, on which the Government, the manufacturers and the clergy were represented, submitted a report to the Government regarding Sunday work in the various pulp and paper mills of the province of Quebec.

"The conclusions of the report were that Sunday work was not important nor necessary, except in some special cases. The result of this report is that no alternative is left but to conform to the Lord's Day Observance Act, an act passed by the Federal Government, and which deals with this matter.

"I am sure that the manufacturers who operate in this province will conform to the provisions of the above act, and submit willingly to the same. Otherwise the Government believes that it is its duty to see that the law is observed throughout the province. We believe that we have given to the manufacturers sufficient time to adjust their work to the new conditions.

"We may add that some mills have completely stopped Sunday work with no serious results.

"Yours sincerely,
"(Signed), L. A. Taschereau."

News Print Rushed to Miami

As part of Canada's contribution towards assisting the tornado stricken area of Florida to recovery, a special Canadian National Railway freight train of 21 cars, carrying 501 tons of news print, left Shawinigan Falls at ten o'clock on the morning of September 23 consigned to the Miami Herald, Miami. The shipment was made by Guy Tombs, Ltd., from the Belgo mill of the St. Maurice Valley Corporation. It was expected that this train would make the trip to Miami in record time.

Canada Paper Co.'s Extensions

Extensive additions are being made to the Canada Paper Company's plant at Windsor Mills, Que. The work involves an expenditure of $149,000, and includes extensions to the finishing room, a new machine room, beater room and shipping room.

Straw Paper Mill

John Bache Wiig, and a group of Lomonton Alberta business men have completed preliminary arrangements for the formation of a company to be known as the Western Canada Pulp and Paper Company, for the purpose of manufacturing paper from straw under the Bache-Wiig process. A Dominion charter will be secured, and the capitalization will be placed at $500,000. The location of the plant has not yet been settled.

Completes Aerial Map of Gatineau

Frank T. Jenkins, manager of the Montreal office of James D. Lacey & Co. (Canada) Limited, recently returned from the Gatineau region, after completing an aerial sketch map of about 6,500 square miles of pulpwood limits in that section. This detailed aerial reconnaissance has been in progress since the middle of July and has been carried out without unusual incident under rather unfavorable weather conditions. The machine used was a Vickers-Vedette, built and piloted by Fairchild Aerial Surveys Company for the Lacey forest engineering service.

Mr. Jenkins, after a few days in Montreal, left for Manitoba, where he will be engaged in aerial reconnaissance the balance of the season. He will be joined by his assistant, M. J. Commins, upon the latter's completion of an aerial survey upon which he is now engaged. In both ground cruising and aerial mapping, the Lacey office in Montreal has had a very busy season.

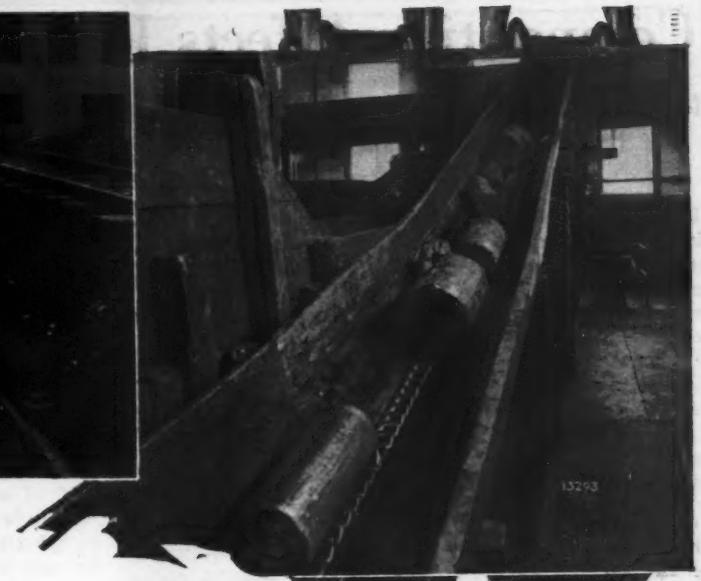
I. P. Co. Buys Timber Tract in Louisiana

Purchase of 110,000 acres, or approximately 170 square miles of short-leaf pine timberlands in Louisiana has just been completed by International Paper Company, for the account of its wholly owned subsidiary, the Bastrop Pulp and Paper Company. The capacity of the Bastrop mill is now being doubled from 70 tons of sulphate pulp and 50 tons of kraft paper daily and the new addition is expected to be in operation November 1.

Due to geographical and natural advantages, Bastrop is one of the lowest-cost mills on the continent manufacturing kraft paper, a tough paper used for wrapping, bags, etc. It is using short leaf pine for raw material, these trees growing to mill size in fifteen years, compared to twenty-five years required by northern spruce.

Tells Rotarians How Paper Is Made

HOPEWELL, Va., September 25, 1926.—Last week's meeting of the Hopewell Rotary Club was a most interesting one. Rotarian F. N. Beveridge, general superintendent of the Hummell Ross Paper Company, made a talk on the manufacture of paper. Mr. Beveridge conducted the club on a tour of his plant, as it were, and described in detail the various processes of converting logs into paper.



Hercules Chain Conveyor (Above)
Detachable Chain Conveyor (Right)

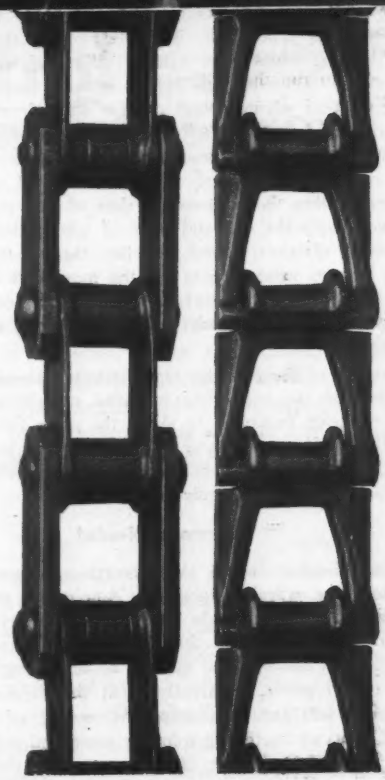
Hard Service

Proves the Dependability of Jeffrey Chains

THE steady grind of conveying raw material from stream to storage, or direct to barking machines; stacking and reclaiming pulpwood from storage; and keeping materials moving inside the mill from one operation to another demands equipment which can be absolutely depended upon to give uninterrupted service—and at low cost.

Just how well Jeffrey Chains stand up to the acid test is demonstrated by the fact that for a half century they have been selected by the leading pulp and paper mills, saw mills, etc.

There's a Jeffrey Chain for every Elevating, Conveying, and Power Transmission requirement—Let Jeffrey Engineers cooperate with you in selecting the proper type.



The Jeffrey Manufacturing Company

931-99 North Fourth St., Columbus, Ohio

New York	Pittsburgh	Cleveland	Milwaukee	Los Angeles
Buffalo	Scranton, Pa.	Charleston, W. Va.	St. Louis	Birmingham
Rochester, N. Y.	Boston	Chicago	Denver	Charlotte, N. C.
Philadelphia	Cincinnati	Detroit	Salt Lake City	Montreal

JEFFREY
MATERIAL HANDLING EQUIPMENT

Jeffrey Products

Elevators—Conveyors
Portable Loaders
Coal and Ashes Handling Equipment
Skip Hoists
Chains and Attachments
Sprocket Wheels—Gears
Crushers—Pulverizers
Sand and Gravel Handling, Washing and Screening Equipment
Locomotives
Coal Mine Equipment
Ventilation Fans

Competition Affects Los Angeles Paper Trade

Matter of Comment That Something Cannot Be Done To Harmonize the Warring Factions of the Trade—Pioneer Paper Co. To Erect Addition to Cost Approximately $45,000—National Paper Products Co. To Break Ground For New $500,000 Unit

LOS ANGELES, Cal., September 23, 1926.— It is perhaps a good thing that the volume of the paper trade keeps up to where it is lest some of the paper men might grow discouraged over the prospect. The facts are that most of the factors in the trade in Los Angeles are doing a volume of business quite as large as ever in their history, yet nearly all of them complain that they are doing this business practically without profit. Apparently the conditions affecting the paper industry here are as highly competitive as they are anywhere else in the entire country, if not more so. Some of the reasons for this state of things have been particularized previously, nor does there seem to be any way in which they can be changed materially or eliminated altogether at present or for some time to come in the future.

Four Factions in the Trade

There really are four factions in the paper trade as far as Los Angeles is concerned. These are: first, the regular paper jobbing houses, which have a large trade and which cover practically all of Southern California; second, there are the small jobbers, most of whom do not get far away from the metropolitan districts of Los Angeles for their business; third, there are the representatives of eastern and mid-western paper mills, and some of the regularly recognized paper brokers, all of whom maintain offices within the business districts of Los Angeles, some of whom work only the city and some of whom also work the outlying country districts: fourth, and last, there is the great number of little brokers whose offices for the most part are under their hats and who work insistently upon the paper consumers of all kinds upon the mere commission they get from the mills which they represent.

This refers to the straight paper industry alone and has nothing to do with the paper box concerns, of which there are two or three differing factions. In short, the paper industry in Southern California is cut up badly by these various and warring factions and between them there have grown up irreconciable differences which tend to disorganize the business.

Harmony Needed

It seems singular indeed that something cannot be done to harmonize these warring factions. Admittedly every individual one of them is trying to do business and to make some profit out of it. All agree upon this fundamental consideration. Yet every individual one of them appears to be willing to do business at little or no profit, apparently upon the erroneous idea that thereby they will put some other fellow out of business. Always and everywhere this is a losing game and nobody gets anywhere. Singular it is, too, that so many of the Los Angeles paper men seem willing to admit this fact, and yet each and everyone of them goes on as if he alone was concerned in the premises.

There is a paper trade association here which is supposed to function along the lines of bettering the conditions in the paper trades. But perhaps as many of the jobbers, both big and little, are outside the association as are within it, with the result that the association is seriously hampered in every effort it makes to improve competitive conditions. The fact seems to be that these conditions have converted what might very easily be a sellers market into a buyers market in Los Angeles and throughout southern California as a whole, so that the buyers are getting trained to haggle and haggle for lower and lower prices, playing off one jobber or broker against another until nobody can tell overnight where prices may be the next morning.

Price Cutting

Your correspondent has been advised by certain of the paper men here that prices on standard brands have been cut badly within recent weeks. True, the initators in such cuts have been outside the association, but association members apparently have followed suit to the extent of at least meeting the cuts or even going it one better.

The results affecting the trade as a whole can be better imagined than described.

All of which is deplorable, and especially so since there appears to be plenty of business in sight for every one and among the printers it is said that conditions are improving from what they have been during the last two or three months.

Good Demand For Board

The makers of paper board say they are having a good trade for the present. This is the season out in California when the fruit and vegetable packers all are busy and their demands for cartons are keeping up the business of the board mills. This condition will persist for the next sixty days, after which the usual fall and winter slump in this department of the paper business will set in.

Collections are reported rather slow all along the line, but every-body seems to feel that this is a temporary condition and nobody seems to be at all alarmed about it.

Pioneer Paper Co. To Build

The Pioneer Paper Company, 5500 South Alameda street, has plans in preparation for the erection of a new addition to its plant and will ask for bids on the general contract in the very near future. The company plans to build a one-story brick and steel structure, 60 x120 feet, at an estimated expenditure of approximately $45,000. The plans also contemplate the installation of new and modern paper making machinery.

Los Angeles Paper Mfg. Co. Improvements

The Los Angeles Paper Manufacturing Company, 1633 South San Pablo street, is altering its mill by adding a 16 x 20 foot structure Class D steel building which will cost about $1,000. This addition, while small, will add materially to the facilities of the company in taking care of its increasing business.

Big Business in Paper Bags

R. F. Attridge, manager of the paper department of Johnson, Carvell & Murphy, merchandise brokers at 247 South Central avenue, says his company is doing a big business at the present time in paper bags especially. In talking he complains of the slight consideration paid to the broker by the regular jobbers in so far as apparently they never consider that the broker has any troubles after he has placed his order with the mills. As a matter of fact, according to Mr. Attridge, then the broker's trouble just begins, as is evidenced by the telegraph and telephone tolls he has to pay in order to satisfy his customer regarding deliveries.

National Paper Products Co. To Expand

According to Victor Hect, assistant manager of the Zellerbach Paper Company, Los Angeles, ground will be broken within the next two weeks for the $500,000 first unit designed by the National Paper Products Company in the Southgate Industrial

(*Continued on page 68*)

Substitute Exact Control for Rule O'thumb and Guesswork

The first step in exact control of paper manufacturing processes is exactness in the selection of raw materials. Then the process of conversion brings forth the problems of proper proportions and correct preparation of these materials. Selection, formulas and preparation of materials can be held in definite control when laboratory equipment constitutes a part of the machinery production.

In control work Valley Laboratory Equipment fills unique needs. This equipment makes possible the critical selection of raw materials, the predetermining of requirements for preparation and the recording of facts for duplicating results in future work. Valley Laboratory Equipment offers successful solution to many of your problems by co-ordinating three factors, namely: Practical Research—Experimental Testing—Commercial Application. Let us give you complete information about this equipment. Write today for 16-page Laboratory Equipment Booklet.

VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: 350 Madison Ave.

Natural and Artificial Reforestation

By D. A. Crocker, Secretary-Forester, Woodlands Section, American Paper and Pulp Association

In the PAPER TRADE JOURNAL for July 8, 1926, there appeared on page 38 an article by Charles R. Berry, "Survival of the Fittest," which seems to the writer to present a view of the problems of reforestation which is in some respects misleading and likely to leave the wrong impression with those who read it.

In his opening paragraph Mr. Berry makes the general statement that "nature, left to her own devices—, operates unerringly toward the goal of perfection." If this were true the work of Luther Burbank and hundreds of others who have labored to improve various plants has been wasted and we might just as well scrap all the agricultural experiment stations throughout the country. It is always risky to generalize, but if any generalization is safe it is that man can usually improve on nature, and that the question as applied to reforestation is not one of artificial versus natural processes but whether the increased return from assisting nature will be sufficient to justify the increased cost.

The Douglas Fir Forests

Mr. Berry quotes Professor B. L. Grondal of the College of Forestry of the University of Washington to the effect that natural reforestation will take care of the future of the Douglas Fir forests of the Pacific Coast if fires are kept out. This is generally true, though even here a certain degree of artificiality, in the form of properly distributed seed trees, will greatly assist nature. When he applies the peculiar local conditions of these Douglas Fir forests to the rest of the world he goes astray.

Mr. Berry also falls into the common error of assuming that because some deciduous species, such as aspen, germinate readily on exposed mineral soil, nature insists that a generation of deciduous species must always follow conifers on burnt over lands. The light, easily windblown seeds of the aspen naturally fill in such areas in many localities because they get there first, but man can establish successful coniferous plantations if they are justified by the financial return. An observer who had seen only the abandoned farms of New England and the Piedmont Plateau of Virginia coming up to dense stands of conifers might likewise assume that nature demanded a generation of softwoods after land had been cleared. Yet in many cases the virgin stands on these areas were largely deciduous, and on such sites the deciduous trees will prosper again.

In the case of the "plains" of Michigan, which Mr. Berry mentions, the whole course of nature has been upset by repeated fires which have produced a thickly matted mass of blueberry bushes and sweet fern in which no tree seeds of any kind can germinate successfully. Last year the writer saw pine plantations on some of the very poorest of these "plains" which had done wonderfully well—both jack pine and red pine—and in a very few years will be of merchantable pulpwood size.

Reforestation Question a Financial One

The whole question of reforestation is really a financial one of initial cost and final return. The final return may be a strictly commercial one in the case of individuals or companies or a combination of commercial and other indirect returns in the case of government and states planting on public lands. When nature will reforest adequately if fires are kept out and provide a second crop of good volume and quality in a reasonable length of time, artificial measures are wasteful. When slight assistance, such as the leaving of seed trees will show a profit, as in the long leaf pine forests of Louisiana, this should be done. In the shortleaf pine forests of Arkansas and the hemlock and hardwood forests of the Lake States, selection cutting promises the best returns. In some cases planting, either on waste land, abandoned fields or under existing growth will give the best returns. The redwood forests of California present one of the best examples of this. Here the natural reproduction from sprouts and seedlings is not sufficient to form a close stand which will produce high grade lumber in the second crop, and the owners of eighty per cent of the redwood timberlands in Humbolt County (producing sixty-five per cent of the redwood lumber output of California) are spending from ten to twelve dollars per acre on planting, in order to perpetuate their operations. The question must be settled locally and economic factors are always vital in arriving at a correct decision.

Work of the Woodlands Section

One of the objects of the Woodlands Section of the American Paper and Pulp Association is to study the best methods of reforestation for the various pulpwood producing regions. It does not recommend either natural or artificial reforestation, or any combination of the two, for all localities; but studies local forest and economic conditions and recommends the method most profitable under those conditions. Artificial reforestation must be carried on in many cases by governmental agencies because of its public benefits, when it would not be commercially profitable for an individual or corporation. Certainly nature has no more settled program in silviculture than in agriculture, and man can and will continue to improve on nature's methods in both cases.

Underwood Paper Mills Close for Two Weeks

PLATTSBURG, N. Y., September 25, 1926.—The Underwood Paper Mills which are a part of the Tait Paper and Color Industries, Inc., closed down last Sunday for a period of two weeks during which time the plant will undergo extensive improvements. During the shutdown a new roof will be constructed on the building housing the paper machines and improvements will also be made to the drying system. Pipes with fans will be installed in the pulp mill for the purpose of drawing the steam from the pulpwood. During the two weeks suspension of operations half the working force will be idle, Superintendent Fred Royce stated. The payroll of the mill is about $1,800 a week. As soon as the planned improvements are completed the plant will reopen in full and it is possible that more help will be added.

Coated Paper Mill Starts in West Canada

NEW WESTMINSTER, B. C., September 24, 1926.—New Westminster has the first coated paper and box board mill. It was opened September 22. It is both the first industry of the kind for the Coast, but the first undertaking in this staple manufacture west of the Great Lakes. The concern is the Canadian Scottish Paper Company. Its plant cost $100,000. Initial output will be 75 tons monthly.

The president and manager is William Gorman, whose first experience was gained in England and Scotland. He had had eleven years contact with the commercial end of the trade at Toronto, and is well informed as to the Canadian industry, which is limited to five other plants' output.

Sewall Timber Cruisers Busy

OLD TOWN, Me., September 27, 1926.—The James W. Sewall office, timber cruisers and engineers, report business still very active with them. Kenneth M. Clark has a party of eight cruisers and several engineers, with necessary labor, in Quebec. Harry W. Hussey, who has just returned from an extensive cruise in Kentucky, has taken a party to Newfoundland. Paul Gardner, C. W. Edgerly and Lewis Gardner each have parties out in Maine. B. C. Marsh is making a detailed cruise of a large area in Nova Scotia. Frank Call is enroute to Newfoundland to undertake work there.

SAVE

Excessive Calendering

A paper manufacturer, known to you all, after operating one Book Machine with a

Puseyjones

Smoothing Press

has ordered ten other machines so equipped.
Is it not worth your while to know why?

ASK US

The Pusey and Jones Company

Wilmington, Delaware

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finance and Operation of Paper Mills

Construction News

Orange, N. J.—Riley & Downer, Inc., 436 William street, manufacturer of paper and other containers, has completed plans for a new two-story addition to its plant to replace a structure destroyed by fire several months ago. It will be 30 x 45 feet, estimated to cost in excess close to $50,000, including equipment. A general contract for the work has been let to the Salmond-Scrimshaw Co., 526 Elm street, Kearny, N. J.

Chicago, Ill.—The Heco Envelope Company has concluded negotiations for a lease of the two-story building at 4500 Cortland street for a period of 14 years with aggregate rental of $350,000, and will establish a new plant at this location. The structure comprises a total of 90,000 square feet, of which more than 70,000 square feet will be given over to production. The company will remove its present factory to this location, and plans the installation of considerable additional equipment for large increase in output.

East Walpole, Mass.—Bird & Son, Inc., manufacturer of paper roofing and kindred products, has plans nearly completion for the construction of a new one-story addition to be used for general storage and distributing service. Monks & Johnson, 99 Chauncy street, Boston, are architects.

East Lee, Mass.—The Mountain Mill Paper Company, East Lee, has concluded negotiations for taking over the hydroelectric power plant and water privileges of the Tayford Co. of this same place, and will use the station for service at its mill. The plant is said to represent an investment of more than $150,000. The new owner is reported to be planning for improvements in the plant, to include the construction of a transmission line for connection with the paper mill property.

Milwaukee, Wis.—The Leader Card Works, Inc., 376 First avenue, manufacturer of machine and hand-cut card stocks, etc., has asked new bids on general contract for the construction of a proposed addition to its plant at location noted, to be three-story and basement, 27 x 140 feet, brick and concrete, reported to cost more than $65,000, with equipment. Eschweiler & Eschweiler, 210 Mason street, are architects. J. T. Johnson is secretary.

Olympia, Wash.—The West Coast Pulp and Paper Company has completed plans and will proceed with the construction of a new one-story addition ot its mill to cost about $75,000, including equipment. Plans have been filed. H. S. Gile is secretary and treasurer.

Olympia, Wash.—T. Osmund, Oregon City, Ore., for many years connected with the Hawley Pulp and Paper Company, Oregon City, is at the head of a project to establish a new paper mill at Tumwater, a suburb of Olympia. A company has been organized to carry out the project. The new organization has acquired the plant of the Tumwater Brewery, and will convert the structure for its proposed mill. A number of alterations and improvements will be made, and machinery installed. The complete project is estimated to cost close to $400,000, with equipment. Work is slated to begin immediately.

Los Angeles, Cal.—The proposed paper mill to be constructed at South Gate, Los Angeles, by the Zellerbach Paper Company, Los Angeles, will be carried out in the name of an affiliated company known as the National Paper Products Company, with headquarters at San Francisco, of which J. D. Zellerbach is vice-president and general manager. As previously reported, the plant will be one-story, estimated to cost close to $400,000, with machinery. V. D. Simons, Tribune Tower, Chicago, Ill., consulting mill engineer, has been engaged to prepare plans for the initial unit. It is expected to ask bids at an early date.

Hoboken, N. J.—The Gatti Paper Company, 1201-7 Madison street, has filed plans for alterations and improvements in its building at location noted, and will proceed with same immediately.

Brooklyn, N. Y.—The Universal Folding Box Company, 148 39th street, has leased additional space in the Bush Terminal, South Brooklyn, comprising a portion of the third floor in building No. 19, to be used for expansion.

New York, N. Y.—Fire, September 18, damaged a portion of the property of the R. C. Kastner Paper Company, 8 Varick street. An official estimate of loss has not been announced. The damage will be replaced.

New York, N. Y.—The Forbes Paper Company has leased space in the building at 32 Laight street, for local distribution and headquarters.

Brooklyn, N. Y.—Fire, September 16, damaged a portion of the stock and machinery at the plant of the Gray Company, Inc., 55-83 West 33rd street, manufacturer of envelopes. An official estimate of loss has not been announced. The damage will be replaced.

Edmonton, Alta.—The Western Canada Pulp Company, Ltd., Edmonton, is reported to have preliminary plans under way for the construction of a new one-story plant unit, to cost approximately $75,000, with equipment.

Quebec City, Que.—The St. Anne Paper Company, Ltd., is disposing of a bond issue of $5,000,000, a considerable portion of the proceeds to be used for the construction of its proposed new mill on the St. Lawrence River, about 20 miles from the city of Quebec, now under way. The initial plant unit is slated for completion early in the spring of the coming year, and work on the second unit will begin immediately thereafter. The mill will have a rated capacity of 250 tons of news print per day. J. T. Donahue is president.

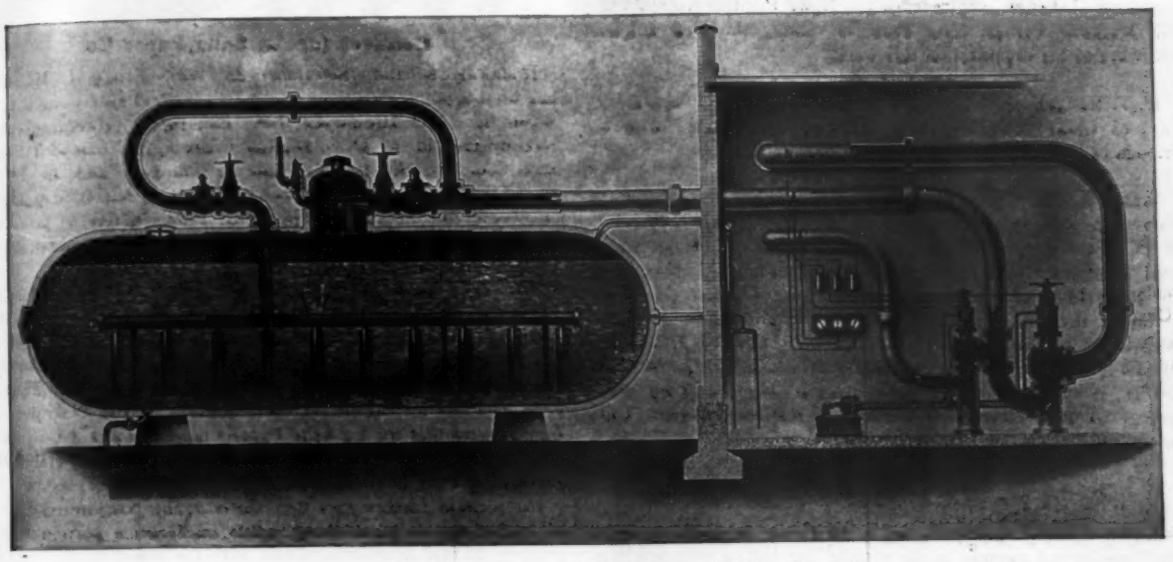
Mistassini, Que.—The Mistassini Power and Paper Company is said to have preliminary plans under way for the construction of a new mill for the production of news print. As now projected the plant will consist of a number of units reported to cost more than $5,000,000, with machinery.

Peterboro, Ont.—The Sealright Company has taken over a portion of the local plant of the Nashwaak Paper Company, and will use for the manufacture of liquid-tight paper containers, bottle caps and kindred specialties. Machinery has been installed and it is proposed to begin production immediately.

A Correction

The additional production of news print of the United States mills during the first seven months of this year over the corresponding period of last year was incorrectly stated in the issue of the PAPER TRADE JOURNAL of September 16. The figures should have read approximately 100,000 tons.

Ruths Steam Accumulators



Section of Ruths Steam Accumulator and Steam Switchboard

CONSTANT PRESSURE
AND
CONSTANT TEMPERATURE

are essentials in the steam system of any industrial plant.

The Ruth system of steam accumulation constantly provides for these conditions. It also provides for an *instantaneous and abundant supply of steam at all times.*

COMBUSTION ENGINEERING CORPORATION
POWER PLANT EQUIPMENT
LIMITED

STOKERS OF ALL TYPES
PULVERIZED FUEL SYSTEMS
STEAM TURBO-GENERATORS
HIGH SPEED STEAM ENGINES
WATER TUBE BOILERS

AIR PRENEATERS
RADIAL BRICK CHIMNEYS
COAL HANDLING EQUIPMENT
ASH CONVEYORS AND HOPPERS
STEAM PIPING

SUSPENDED FLAT ARCHES
DE-AERATORS
CONDENSERS OF ALL TYPES
OIL BURNING EQUIPMENT
BOILER FEED PUMPS

PULVERIZING AND GRINDING MILLS
RECORDING INSTRUMENTS
INDUCED AND FORCED DRAFT FANS
DIESEL OIL ENGINES
ECONOMIZERS

HEAD OFFICE—TORONTO

VANCOUVER, MONTREAL, WINNIPEG

New York Trade Jottings

R. A. McInnes, general manager of the Anglo-Canadian Paper Company, Quebec, is spending several days in New York.

* * *

The Newspaper and Magazine Paper Corporation are removing their offices to 21 East 40th street, New York, on October 1.

* * *

George D. Bearce, engineer, of the News Print Service Bureau, 342 Madison Avenue, New York, is visiting the New England members of his organization this week.

* * *

H. F. Bullard, assistant to the president of Finch, Pruyn & Co., Inc., of Glens Falls, N. Y., is renewing acquaintance with his friends in the New York paper trade this week.

* * *

Walter E. Perry, president, and D. A. Crocker, secretary, of the Salesmen's Association of the Paper Industry, with headquarters at 18 East 41st street, New York, are bound for Chicago, to attend a luncheon of the association next Tuesday, October 5, in the Rose Room of the Sherman Hotel. Mr. Crocker also plans to attend the convention of the Empire State Forest Products Association at Ithaca, N. Y., on Thursday, October 7, and the Annual Wood Utilization Conference, of which George W. Sisson Jr., is chairman, on the same date, at the New York State College of Agriculture, Department of Forestry, Cornell University.

R. S. Kellogg Addresses New York Salesmen

"A new industry may spring up in the United States over night and force radical changes in the making and selling of competing products," said R. S. Kellogg, secretary of the News Print Service Bureau, speaking at the Monday luncheon of the Salesmen's Association of the Paper Industry in New York City on September 27.

"No one can set a limit to the capacity of the people of this country to absorb a commodity which appeals to them, and no prophets have gone further astray in this respect than the professional economists," continued the speaker. "A few years ago we were assured that the saturation point for automobiles would be reached at six million cars. Now we have twenty million motor vehicles, and the talk is of forty million.

"If twenty years ago any one had predicted the present yearly national expenditure of five billion dollars because of automobiles, he would have been considered too crazy to listen to," said Mr. Kellogg. "Now we do our listening over the radio and spend half a billion dollars a year for such equipment.

"Conversely, the consumption of shoes per capita is less than it was twenty years ago, notwithstanding the tremendously increased buying power of the people, and the phonograph manufacturers have had to make great changes in their instruments in order to keep a toehold in the market.

"Now the oil burner is giving old King Coal the bumps for household heating, while pulverized coal is superseding oil fuel in industrial plants. One of these days we may be getting our commercial supply of energy by wireless. These are only examples which might be multiplied indefinitely. The most certain thing about a prophet is that he is probably wrong.

"The paper industry is fortunate in having had an expanding market so far and one which is likely to expand for some time to come. Apparently the peak of per capita consumption has not yet been reached in any grade of paper, and there seems to be little immediate danger of the supplanting of paper by some other product.

"There are steady improvements in paper making, and revolutionary changes before many years are within the range of reasonable possibility. It may not always require a complicated machine weighing a thousand tons to make a sheet of paper which weighs only a pound to one hundred square feet of surface.

"We are only now discovering that devices which have been used for a century are unnecessary, and the manufacturer who first brings about a successful combination of the new knowledge all along the line will set a pace that will be hard to follow.

"Standardized quantity output is now the word everywhere, but there will always be a place for unique and high grade products, and good salesmanship will get a reward from them."

Receiver for La Salle Paper Co.

INDIANAPOLIS, Ind., September 25, 1926.—Ernest J. McErline has been appointed receiver for the La Salle Paper Company, of South Bend and Mishawaka, Ind. Bankruptcy proceedings were recently filed in the U. S. District Court by the Campbell Paper Box Company, the Brehmer Electric Company and the N. P. Bowsher Company, of South Bend. Claude E. Nicely, Republican member of the South Bend Board of Public Safety, is president of the paper company; John G. Yeagley is vice-president, and Mrs. Nicely, widow of Frank P. Nicely, is secretary.

While a schedule of assets and liabilities is not required in an involuntary petition in bankruptcy, the company's liabilities are said to approximate $325,000, including bonded indebtedness of about $225,000, and unsecured credits of about $100,000. Against this are the assets consisting of the South Bend and Mishawaka properties and the equipment. The petition filed in federal court simply states that the La Salle Paper Company owes debts in excess of $1,000 and that the petitioners have provable claims, in general accounts, in excess of $500.

The petition further says that the company "committed an act of bankruptcy in transferring, while insolvent, a portion of its property to one or more creditors with the intent to prefer such creditors by the payment in full of a number of creditors." The request for a receiver stated that the property consists of two factories for the manufacture of paper, all of great value; that the property is rapidly deteriorating; that it is unprotected by fire insurance and that it will further deteriorate unless taken over by a receiver.

Nash Engineering Co. To Move To Graybar Bldg.

The Nash Engineering Company of South Norwalk, Connecticut, will move its New York Sales Office from 350 Madison avenue to the great new Graybar Building, which will be the largest office building above ground in the world, between April 1st and May 1st of next year. This was decided upon partly because of the increased business of the Nash Engineering Company, which made additional space imperative.

The Graybar Building is being erected by the Todd, Robertson, Todd Engineering Corporation right next to the Grand Central Station, between 43rd and 44th streets, and Lexington avenue and Depew place. It was designed by the firm of Messrs. Sloan and Robertson and will have a forty-foot concourse which will lead right into the Station and serve as the eastern entrance to that important terminal.

Eastern Offices, Inc., are the owners of the building.

Strike Continues in Norway

WASHINGTON, D. C., September 28, 1926.—The Paper Division of the Department of Commerce has a cablegram from Commercial Attache Sorenson at Copenhagen relative to conditions in Norway stating that labor conditions are still disturbed with the strike in the paper and pulp industries continuing. He states also that there seems to be very small hope of an early settlement, since the latest negotiations and a second intervention by the Norwegian government arbitrator were summarily broken off without any results.

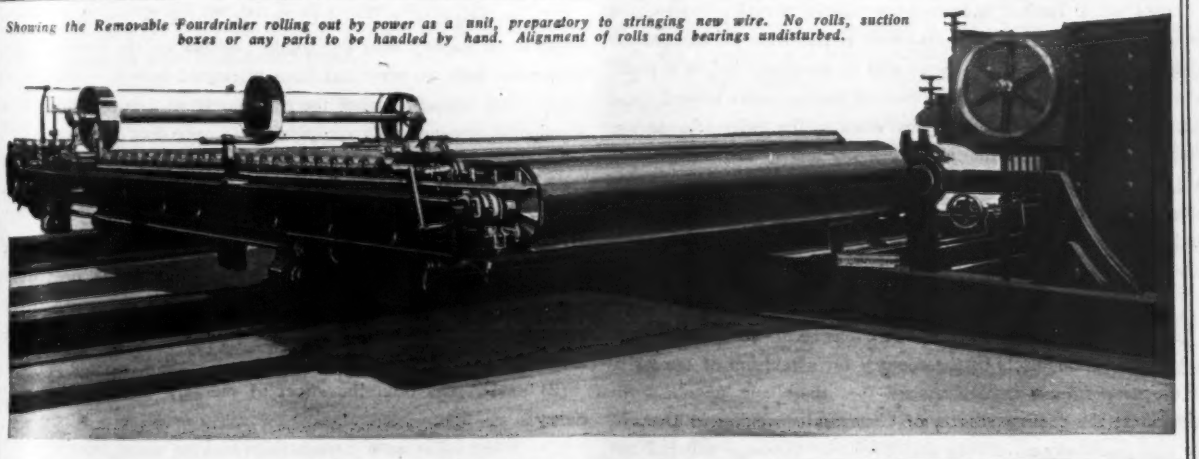
Don't wreck your Expensive Fourdrinier

to put on a new wire

A REMOVABLE FOURDRINIER

(Beloit Patent) will save you all hard labor and heavy lifting, wear and tear on rolls and bearings, wear on wires due to misalignment of rolls.

Showing the Removable Fourdrinier rolling out by power as a unit, preparatory to stringing new wire. No rolls, suction boxes or any parts to be handled by hand. Alignment of rolls and bearings undisturbed.



Record As A Money-Earner

"... holds the best record as a money-earner of any machine in the United States on like products—which has been justified by the judgment of some of the best men in the country."

Canadian Licensee—Dominion Engineering Works, Ltd.

The NEW BELOIT FOURDRINIER

FOUNDED 1858 BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS

BELOIT IRON WORKS **Beloit, Wisconsin, U. S. A.**

PAPER TRADE JOURNAL
ESTABLISHED 1872
With Which Is Combined
[redacted]
The Magazine of the Paper Industry
HENRY J. BERGER, Editor

Member A. B. C. Audit Bureau of Circulations

Vol. LXXXIII New York, September 30, 1926 No.14

NEWS PRINT PRICES

As the period is now approaching when consideration will be given to news print contracts for 1927, there is a good deal of speculation regarding the probable price. The prevailing opinion is that there will be no change from the current price of $65 a ton. Last year at this time, it will be remembered, considerable perturbation was created in the industry as the result of the attitude taken by President Biermans, of the Belgo-Canadian, then an independent company, but now controlled by the St. Maurice Valley Corporation. Mr. Biermans announced the intention of his company to take business at $65 per ton instead of the then prevailing rate of $70.

Fears of a further reduction no longer prevail; indeed, the belief is entertained in well-informed circles that an upward revision in the price of news print will be necessary before a great while, owing to the rapid depletion of timber limits located most convenient for the delivery of the wood to the mills. As cutting operations extend to the more remote limits, increasing costs are counted on to enter as a factor, and by the time the present program of expansion is completed, a general revision of the outlook may be necessary.

NO TARIFF CHANGE LIKELY SOON

In spite of the apparent sentiment that seems to be crystallizing in the various parts of the country for a revision of the tariff in the near future, indications are that there will be no tariff revision at the coming session of Congress convening in December and practically no chance that President Coolidge will call an extra session after March 4.

It is pointed out by those who have followed the tariff situation closely for years that never in the history of the country has any tariff legislation been passed at a short session of Congress such as convenes this year. The Congress generally finds time for nothing during the short session other than appropriating money for the routine work of the government. The coming session automatically expires on March 4 when a new Congress comes into being.

The only way in which any tariff action could be taken between March 4, 1927 and the December, 1927 session of Congress would be by the calling of an extra session by the President. Those who are in closest touch with him have expressed a very serious doubt whether he would call a special session for the revision of the tariff at this stage of the game. While the leaders of the Democratiic party are trying to make the country believe that it wants a tariff revision, the interest is not as great as members of that political party are trying to make it. Those who are "in on the know" as to the tariff situation apparently are not looking for any tariff revision until after the next Presidential election anyhow.

INDUSTRIAL CONDITIONS

In view of the increasing importance of consolidations and combinations in our industrial life, and the renewed discussion of national anti-trust policy, the National Industrial Conference Board, 247 Park Avenue, New York has issued the following statement:

"Such a momentous and vital question as that of public policy toward modern industrial integration, often referred to as the "consolidation movement," and of the regulation of competitive practices cannot be properly settled on the basis of theories or opinions based on circumstances existing at the time that consolidations, or the so-called "trust," first became a public problem in this country.

"A sound evaluation of public policy in regulating industrial integration and competitive practices, in the view of the Board, is possible only upon a comprehensive basis of scientifically collected present-day facts regarding the actual experience with mergers and their effect upon our economic life, such as is attempted in the investigation now nearing completion by the research staff of the Board."

The investigation referred to by the Board in the above statement is an inquiry into the whole problem of the consolidation movement such as never has been attempted before. The Board in its study has approached the question from a purely pragmatic standpoint, systematically compiling data regarding the experience of the industries operating under a regime of consolidation and of those operating more or less free from the influence of consolidated control.

Outstanding objectives of the Board's inquiry are to ascertain the following principal facts: (1) What is the relative degree of financial success of industries which have been consolidated, as against those which have remained outside the sphere of consolidations?

(2) What has been the effect of mergers on industrial efficiency?

(3) What effect have combinations had on industrial stability?

(4) What has been the effect of consolidation on the price level in industries where consolidations prevail, as compared with the price level of commodities produced by industries in which consolidations play no, or at least no important, part?

Authentic, scientifically collected and analyzed data on these and similar aspects of the consolidation movement will furnish a foundation of factual evidence upon which a sound appraisal of public policy can be made, in the view of the Board, provided the results are interpreted free from any pre-conceived opinions or convictions on the subject. The study now in progress is nearing completion as far as the collection of the data is con-

cerned, and its scope can be judged by the fact that the inquiry covers the history of the operation of concerns in approximately 60 different industrial fields, over long periods of years. The report embodying the results of this investigation will be the third in a series, the first two of which were "Trade Associations, Their Economic Significance and Legal Status," and "Public Regulation of Competitive Practices."

Work of the Paper Imports Committee

The efficacy of the work of the Import Committee of the American Paper Industry, which is just completing its second year of official life, is shown by several recent decisions by the United States Customs Court, in which misclassification or undervaluation of foreign papers are found to have been practiced.

Among the cases decided in favor of the Government are the following:

Machine Glazed Sulphite paper, imported at Savannah, was held to have been undervalued nearly three quarters of a cent a pound. A deduction of the amount of German inland freight was denied also.

An additional duty of 10 per cent for special finish was imposed on a shipment of envelopes imported at St. Louis.

Brown straw wrapping paper imported at New York was held to have been undervalued.

Importations of rotogravure paper at Norfolk were found to have been undervalued by the Customs Court when the importer appealed a ruling of a single judge to the same effect.

Blue print paper imported at Chicago was held to be undervalued, and the Court in rendering its decision was caustic in its comments upon the conduct of the importers.

The Court held a New York importation of printing (book) paper subject to an additional duty of 10 per cent because not marked with the country of origin.

In a San Francisco case the Court suggested that a fine might have been imposed for the frivolous protest made when the importers appealed from the decision of a single judge in holding printing paper to have been undervalued.

Cushnoc Paper Corp. Buys Plants

AUGUSTA, Me., September 25, 1926.—The property and assets of the Cushnoc and Kennebec Paper companies, bankrupt since January, 1922, have been bid in by the Cushnoc Paper Corporation, recently formed in this city and consisting of the creditors of the two bankrupt companies.

A unique phase of the case is that, whereas trustees are usually appointed to close out a bankrupt concern, these companies have continued in operation since June, 1922, doing an $8,000,000 business during that period.

The new corporation has turned over stock amounting to $1,034,000 in exchange for the claims of the creditors, who thus become stockholders of the new corporation.

About $500,000 will be expended in improvements which will increase the output about 50 per cent. The new directors are: A. S. Wyman, B. S. Viles and F. S. Bagley of this city and E. T. Wilkinson and Hugh C. White of New York City.

Will Not Try To Control News Print

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 21, 1926.—Reports have been circulated in the trade for some time to the effect that the British are trying to establish some kind of a syndicate to control the newsprint and pulp supply of the world.

An investigation has been made by officials of the government in England, and while the report is confidential it is understood that their work has shown that there is no basis at all for the report.

R. F. McElwain Wed To Miss Rosamond Read

HOLYOKE, Mass., September 28, 1926.—The wedding of Miss Rosamond Read, granddaughter of Mrs. Clarence Willard Read of 71 Taylor street, an accomplished girl of 21, to R. Franklin McElwain Vice President of the Crocker McElwain Company and Chemical Paper Manufacturing Company was celebrated Friday morning at 10 o'clock at the home of the bride, Rev. H. O. Hannum former pastor of the bride but now of Newburyport officiating.

The wedding was a quiet affair there being no attendants and only near relatives of the contracting parties attending. On their return from a wedding trip the couple will live on Riverdale street West Springfield in the old McElwain home.

Mrs. McElwain was born in South Hadley and graduated from the Holyoke High School in 1922. She has been employed in the office of the Crocker McElwain Company. The romance, however, started in the close friendship between Mrs. McElwain and Mr. McElwains daughter Miss Paulina McElwain a student at Bryn Mawr, the two having been "pals" from early school days. Mr. McElwain has also one other daughter Miss Rachel attending the Walnut Hill school at Natick.

Mr. McElwain is well known to the paper trade throughout New England. He was born in Becket in 1865 and was educated there and in Holyoke. He married October 18, 1904, Miss Jessie B. McElwain daughter of Edwin S. McElwain of Middlefield, who died in 1917. Mr. McElwain began his paper career when the Valley Paper Company was formed. Mr. McElwain was made secretary in a wholesale paper house in that state. He returned to Holyoke in 1887 and became connected with the Parsons Paper Company. Later he was made assistant treasurer of the Valley Paper Company where he remained until 1899 when the American Writing Paper Company was formed. Mr. McElwain was made secretary of the company and later manager of manufacturing. In 1903 he resigned to become associated with his brother-in-law, C. A. Crocker who bought the Cabot street property of the Holyoke Water Power Company and formed the Crocker-McElwain Company. In 1913 the two men bought the Chemical Paper Company from James H. Newton, renamed it the Chemical Paper Manufacturing Company and have operated both mills with a high degree of success since. Mr. McElwain is vice president of both companies.

He is a member of the Mt. Tom Golf club, Nayassett Club of Springfield, Holyoke Canoe club and the Second Congregational church.

Daverin Paper Mills Resume

CAMDEN, East, Ont., September 27, 1926.—The Daverin Paper Mills, Ltd., have resumed operation. A thorough re-organization has taken place, important changes in the personnel of the company have been effected, and under the new conditions, both physical and financial, we see before us a successful future.

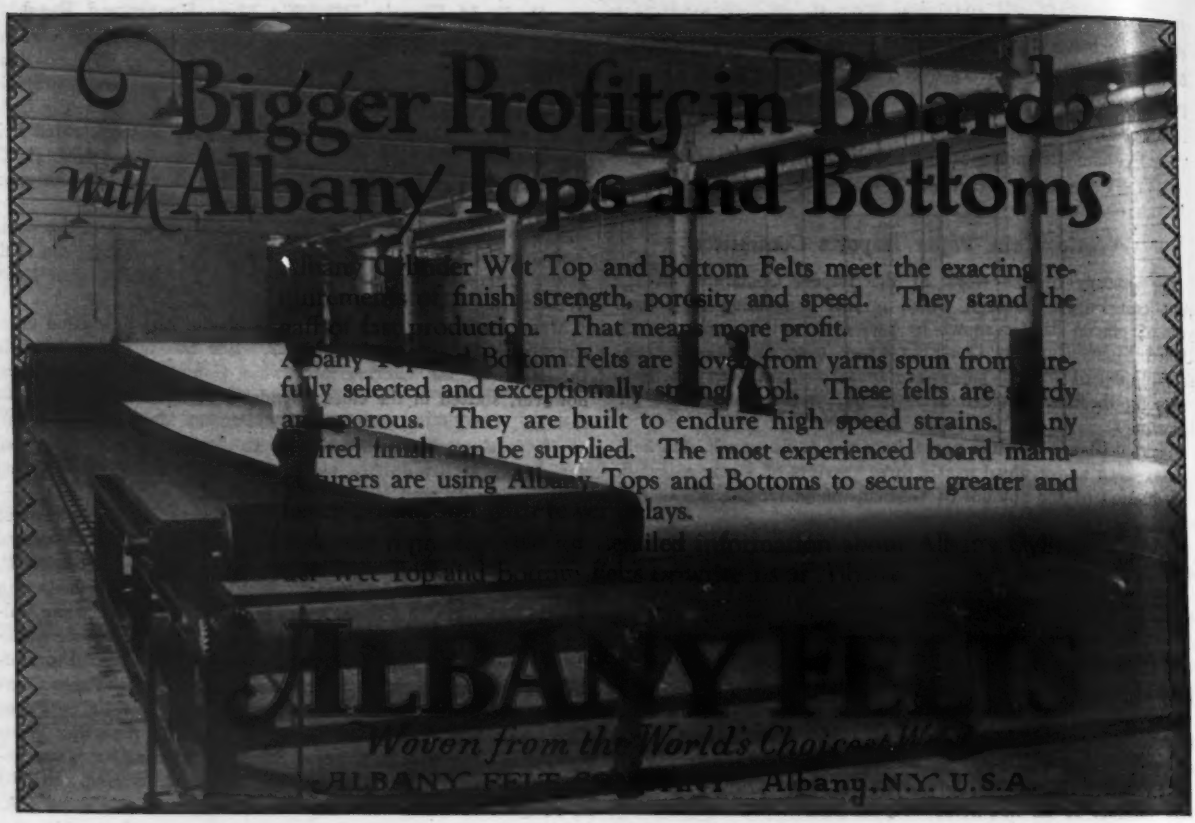
The new officers are as follows: Daniel Daverin— president and general manager. Fred D. Tuck—vice president. Joshua F. Barker—Secretary and Treasurer. Directors— Daniel Daverin—Fred D. Tuck—Joshua F. Barber—Charles W. Stewart—William Puechin.

Production will be confined to bonds—ledgers—envelope—offset—writing and high grade specialties, and the mill is well equipped to make these grades.

Radical changes in the piping system and water supply have been made, thus insuring a uniform clean product.

Goes With Missisquoi Pulp & Paper Co.

HOLYOKE, Mass., September 21, 1926.—Harry Lindquist for several years manager of board sales for the Chemical Paper Company of Holyoke has resigned his position effective October 1, to become vice president and sales manager of the Missisquoi Pulp and Paper Company of Sheldon Springs, Vt.


Bigger Profits in Boards
with Albany Tops and Bottoms
Albany Duplex Wet Top and Bottom Felts meet the exacting re-
quirements of finish, strength, porosity and speed. They stand the
gaff for production. That means more profit.
Albany Duplex Bottom Felts are woven from yarns spun from care-
fully selected and exceptionally strong wool. These felts are sturdy
and porous. They are built to endure high speed strains. Any
desired finish can be supplied. The most experienced board manu-
facturers are using Albany Tops and Bottoms to secure greater and
more uniform profits.
ALBANY FELTS
Woven from the World's Choicest Wool
ALBANY FELT COMPANY Albany, N.Y. U.S.A.

At the Beaters!

A continually increasing number of paper mills are placing a **LaMotte Roulette Comparator** at their beaters because they are finding that it enables them to obtain better sizing, a more uniform product and marked economy in the amount of alum used.

The Comparator "De Luxe."
Patent Applied For

The LaMotte Roulette Comparator

measures the exact degree of acidity or alkalinity of solutions. And it does it rapidly and accurately. It is scientifically correct in principle yet so simple in operation that it can be used effectively by the average workman.

With this convenient apparatus, tests can be made frequently at the beaters and the operator can maintain a close control of the process at all times.

Write today for full information!

LaMotte Chemical Products Company

McCormick Building **Baltimore, Maryland, U.S.A.**

Section of the

Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

Penberthy Venturi Drier Circulator

This apparatus is a development of the principles that have long been used in many mechanical devices for inducing a flow of fluid (air, water, steam, or gas) such as, for instance, the feeding of boilers by injectors, removal of water by ejectors, air removal from steam engine condensers by the steam jet air pump, and many similar applications that are being successfully used in present power plant equipment.

The principles of the Penberthy venturi drier circulator are based on the discovery in 1796, by Venturi, that an increase in velocity at a restricted point in the stream flow of a fluid in a tube, creates a sucking action or pressure reduction at that point.*

Taking advantage of this relation between velocities and pressures of fluids when flowing through converging and diverging tubes, the venturi drier circulator has been devised to create a differential in pressure between the steam inlet and the siphon outlet of a paper drier.

It can be readily understood that a sufficient difference in pressure between those two points must result in forcing water out of the lower half of a paper drier.

This differential is easily obtained in the design of the Penberthy venturi drier circulator by using the flow of steam to the drier to induce a reduction of the contracted point of the venturi tube.

The air surrounding a drier and the paper passing over it, absorb heat; this absorption, when the heat is supplied by steam within the drier, results in condensation. Condensation of steam means a very great reduction in volume, and the reduction in volume furnishes the space for more steam to enter.

Steam in the drier occupies over 1,700 times the space that it does when it is condensed to water. We, therefore, have over 1,700 times the volume of fluid entering the drier as leaves it as water. This insures a continued flow of steam that can be made to create a suction by placing a circulator tube in the steam supply line to the drier, and by taking advantage of the venturi principle this pressure reduction can be obtained without sensible reduction of pressure in the supply line.

Having created a point of reduced pressure in the circulator tube, this lowered pressure must be transferred to the siphon pipe, which is the exit end of the drier, and thus set up the differential that will remove the water. This is accomplished by the introduction of a separator fitting in the condensate line from the paper drier. This separator fitting uses the same fundamental principles for operation as does the circulator; that is, it consists of a converging tube, and depends on changing velocities to eject the water into the condensation header that accompanies all paper-machine drying units.

In fitting a machine with this apparatus, each drier is provided with a circulator and separator fitting. These are placed in the existing steam supply and condensate return lines for each drier, and the appropriate connecting pipe between the two fittings for the transfer of reduced pressure from the circulator to the separator is added. These two fittings are made in regular pipe sizes, so that a selection can be made to suit existing pipe sizes on the driers. The installation work, therefore, amounts to little more than cutting these fittings into existing pipe lines. These fittings are made with throats that are selected for the particular duty imposed on the driers to which they are applied; as, for instance, at the wet end of the machine, where the steam and condensation volumes are greatest, throats are selected that will deliver larger quantities than for the dry end, where smaller quantities are handled. Each drier thus becomes a complete unit in itself, acting entirely independently of its neighbor, and inducing its own circulation, irrespective of vacuum pumps or other means of inducing flow on the machine as a whole.

Graduated drying may be used, if that method is desired, by dividing the main steam and condensate headers into sections, and placing steam regulating valves between the sections of the steam header. The flashed steam from the condensate may be passed into the first few driers and water temperature reduced to the boiling point, or lower, if that method of operation is desired.

The final disposition of condensate is cared for through a low pressure steam trap that will deliver the full bore of pipe connection, and is then pumped to feed water heater, or other point where hot water is desired. Motor driven centrifugal hot water pumps are supplied, when desired, for handling the hot condensate, or the direct-acting receiver pump can be used, as local conditions dictate.

To follow the cycle of operation, reference is made to the accompanying sketch of a single drier and the Penberthy venturi drier circulator. Steam enters the supply header in the usual manner from whatever source drier steam is derived. It passes up the drier supply pipe to the venturi circulator, where the velocity is changed by passing through the restricted area of the tube. This change of velocity induces a suction at the gap between the converging and diverging tubes.

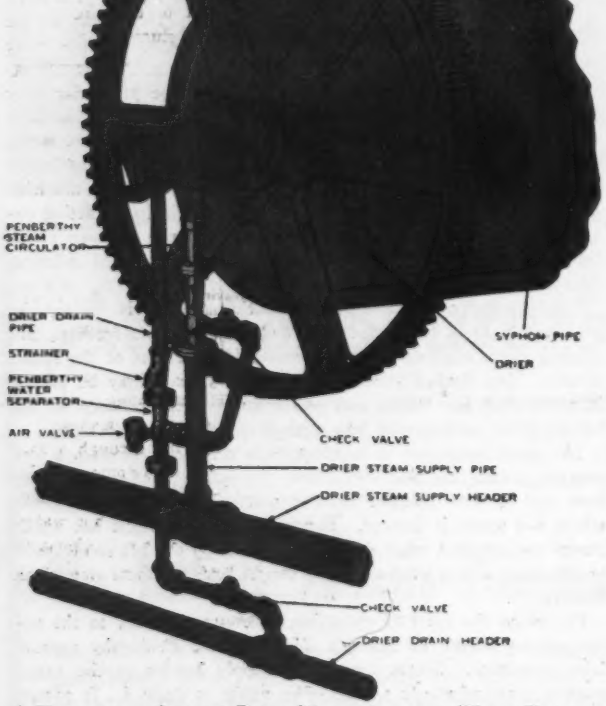
The angle of divergence in the tube on the outlet end of the circulator is carefully designed to convert the velocity head acquired at the gap back to static head at the outlet end of the tube, thus returning the steam issuing from the circulator to a state of pressure closely approximating that at the inlet end of the tube. The steam then passes on to the drier, is condensed, and falls to the bottom, where the condensate is picked up by the bent siphon pipe.

To insure that the water is picked up by this pipe, the steam separator is inserted in the outlet line connected to this siphon

* Further explanation of this principle may be found in Kents' Mechanical Engineers Handbook, Edition 1923, page 776, under The Venturi Meter.

pipe, and the reduced pressure developed at the gap in the venturi circulator is transferred to the separator chamber by a pipe connection, shown as suction pipe on the sketch. The reduced pressure, or "suction pull" at the separator chamber, creates sufficient differential between the drier inlet and siphon outlet to draw the water into the siphon pipe and lift it through the drier journal to the steam separator. The water having reached this point has acquired a velocity in the pipe, due to this difference in pressure. The velocity head thus acquired is sufficient for the tube in the separator to give the water a piston action and to eject the water into the drain pipe and return header.

When the drier has been emptied of water and the seal at the end of the siphon is broken, the lower pressure of steam in the drier than that of the supply pipe, will follow the water into the separator. This flow will also be augmented by the pulling power of the circulator at the separator chamber, and, being close to the same density as the steam in the circulator, it will not remain a solid piston when leaving the separator tube, but will expand and fill the separator chamber with steam, and therefore, will be drawn back into the circulator and sent to the drier again. Between the periods of discharging water from the drier, therefore, there are periods of a forced circulation of steam through the drier that keep up a violent agitation of the steam or vapor contents of the

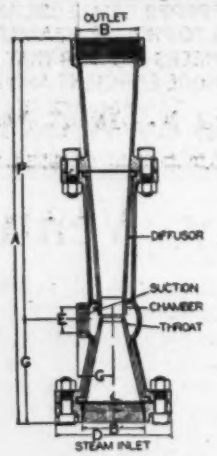


A UNIT OF THE LARGEST PAPER MACHINE IN THE WORLD EQUIPPED WITH PENBERTHY CIRCULATORS AND SEPARATORS.

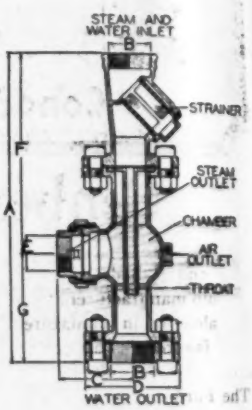
drier, and greatly assist in drawing air away. There is also during these periods when the end of the siphon pipe is not entirely submerged, a mixture of steam and water drawn through the siphon. When this mixture reaches the separator, the water being the denser medium is shot through into the drain pipe; the steam in such a mixture being much less dense than the water, comes under the influence of the "suction pull" from the venturi circulator, and is drawn back through a passage provided in separator discharge chamber into circulator suction pipe, and is sent back to the drier.

In like manner, the flashed steam from the condensate leaving the separator tube, is sent back to the drier for re-use. Under the condition of handling a mixture of steam and water, the Penberthy separator functions as other steam separators, in that they depend on changes in velocity or direction to throw out particles of water carried in the flow of steam.

Automatic air cocks are provided on the separator to release air that is lodged at that point; but, as a large part of the air is actually carried along with the water by entrainment, air removal valves are provided at convenient points in the return header line, due regard being given to tap points where air pockets may be formed in the discharge lines.



CIRCULATOR—
Sectional View Model D
with Flanges



SEPARATOR
Sectional View Model S
with Flanges

Exhaustive tests have been made on these circulators as applied to a paper machine, and they have been compared with similar tests made on the same machine when it was equipped with the regular two-header system. With the regular two-header system and a paper speed of 670 feet per minute, the average temperature of steam in the drier was 240° F., and the average surface temperature of the driers was 166° F., a difference of 74° F. between steam temperature and the surface in contact with the paper. The drying efficiency on this test was 61.4 per cent. The same machine, equipped with circulators, running at 673 feet per minute, had average steam temperature in the driers of 206.4° F., a difference of 43.6° F. between steam temperature and the surface in contact with the paper. The drying efficiency on this test was 82.5 per cent. This is only one instance where temperature drop between steam and drier surface is materially lessened by reason of keeping the inside surface of the drier free from water and air, and thereby increasing the conductivity of heat through the metal wall of the drier.

It is believed that a careful investigation of this piece of apparatus will convince the reader that it is based on sound principles of engineering; and the reputation of the Penberthy Company, of Detroit, who manufacture the product, coupled with the experience possessed by the inventor in paper drying, will insure a correctness of design and application to paper machines that cannot be surpassed by the methods now in general use in the paper industry.

May Build Paper Mill at Lewiston

PORTLAND, Ore., September 24, 1926.—L. A. De Guerre, of Wisconsin City, Wis., who recently was the consulting engineer in converting the old brewery plant near Olympia, Wash., into a paper mill, has been engaged by the citizens of Lewiston, Idaho, to confer with a committee as to the establishment of a paper mill in that city. He will proceed to Lewiston in a few days and will make a survey with the view of building this plant. In the Clearwater region in this section there are vast quantities of white fir available for such a paper making project.

Soda Pulp Investigations

I—Yield and Quality of Pulp As Effected by Length of Chip[1]

By D. E. Cable, R. H. McKee and R. H. Simmons[2]

It has long been thought that the maples and birches are less desirable for soda pulp manufacture than is the aspen (*Populus tremuloides*), commonly called poplar or "popple." In general the latter is more easily reduced to pulp, gives higher yields (on a weight basis) and its resulting pulp consumes less bleach than is true of the former species.

Paradoxical as it may seem, however, *the hardwoods actually yield much more pulp per cord of wood than is obtained from the same volume of poplar,* due to the fact that the former have densities or specific gravities of from 20 to 60 per cent more than the poplar.

Because of the fact that beech, birch and maple (of pulpwood size) can in many cases be purchased at a price per cord fully as low as that for poplar, and in view of the rather wide range of commercial availability of the former woods both in United States and Canada, these woods should not be overlooked by soda pulp manufacturers as very desirable raw material when used either alone or in admixture with the poplar or aspen which is so widely favored in this country as starting material for the manufacture of soda pulp.

The Ford Motor Company was said to be erecting a soda pulp mill which will manufacture soda pulp from 75 per cent hard maple, the remainder ash, oak and other hardwoods.[3] It is also reported[4] that a new soda pulp mill (now known as the Tonawanda Paper Company) has been constructed which will make soda pulp chiefly from *birch*. We have since learned that this mill have been using poplar, but contemplates the use of birch and other hardwoods later. The use of hardwood in the commercial production of soda pulp for book paper is, therefore, being seriously considered by more than one pulp company in this country at the present time.

In the event that it would be found desirable to cook a mixture of poplar and such hardwoods as beech, birch, and maple it is quite obvious that differences in penetration rates for these woods and, possibly, differences in the rates of chemical reaction might exert a selective pulping action which would successfully reduce the lighter weight poplar and only partially reduce to a pulp the denser woods. A similar situation in the sulphite process, carried to the other extreme, has recently been described by Crossley[5] in which he states, "About 25 years ago, we tried to do that (cooking a mixture of poplar and spruce) and we found that when we mixed 25 per cent poplar and 75 per cent spruce, it was impossible to find any poplar in the resulting pulp."

It has been suggested that, possibly, the rate of cooking by the soda process might be influenced to a certain extent by the length to which the chips of a given species is cut. Presumably chips of a shorter length would be more quickly penetrated and less time would be required for the diffusion of water soluble lignin derivatives (resulting from the action of caustic soda solution on wood at elevated temperatures) from the center of the chips to the outside and of additional caustic soda molecules from outside of chips to their interior parts than would be true of longer chips of the same species.

The variables, (a) initial concentration of caustic soda in digester liquors, (b) amount of caustic soda per 100 pounds of wood), (c) maximum cooking temperature or corresponding maximum pressure and (d) duration of cooking at maximum pressure, as involved in the cooking of aspen by the soda process have been systematically studied by Surface.[6]

So far as a search of the literature would indicate no investigator has ever made public record of data bearing on the factor which has been studied in this investigation, namely, *the length of chip.* If the length of chip were a variable which would affect yield and quality of pulp for a given species, other variables being kept constant, then it would undoubtedly be found that operating under optimum conditions as set forth by Surface, one species of wood such as aspen which is easily reduced by the soda process would give best results when cut to a certain chip length and another species such as birch or maple which is reduced with more difficulty by the soda process would give optimum results when cut ot a shorter chip length.

Thus it might be possible, if the length of chip were a controlling variable to get a uniform or more homogeneous pulp in the soda process by taking a mixture of aspen chips cut to its optimum length and of birch and maple cut to their respective optimum chip lengths than by taking a mixture of all these species cut uniformly to one definite chip length or to one average chip length.

Experimental Work

Detailed information as to the following phases of our work will be found in an article entitled, "Apparatus and Methods for Experimental Investigations on the production of Soda Pulp" by Cable, McKee and Simmons[7]: (1) Method of securing authentic wood and preparing chips therefrom, (2) Kinds of soda pulping tests, (3) Methods of cooking used, (4) Method of determining yield of pulp and (5) Reliability of results obtained.

TABLE 1

SPECIFIC GRAVITIES OF WOODS USED IN THIS INVESTIGATION

Kind of wood	Specific gravity of bone dry wood as measured by this laboratory on wood actually used lb. per cu. ft. solid wood	Oven dry Weight per Cord of wood (calculated) lb.
Aspen (EP)	22.32	2232
White birch (WB)[9]	37.73	3773
White maple (WM)[10]	42.19	4219
Silver maple (SM2)		
Near circumference of trunk	39.81	
Half way out from center	42.84	
At center of trunk	42.14	
Average for SM2	41.59	4159

Wood Used

Four species of wood were used in this investigation—aspen (designated by the letters EP), white birch (WB), white maple (WM), and silver maple (SM2). These four kinds of wood were received from the mill of the Oxford Paper Company

[1] Report presented as contribution No. 3 from the Oxford Paper Company Research Department, Brooklyn, N. Y.

[2] Members TAPPI.

[3] Anon. Hardwood for Paper—Ford Company's Achievement. The World's Paper Trade Review 83, No. 19, 1576 (May 8, 1925).

[4] Anon. New Soda Mill Will Have Novel Features. Pulp and Paper Mag. Can. 23, No. 28, 774 (July 9, 1925).

[5] Pulp and Paper Mag. Can. 24, 882 (July 29, 1926).

[6] Effects of Varying Certain Cooking Conditions in Producing Soda Pulp from Aspen. U. S. Dept. Agric. Bull. No. 80 (1914).

[9] This is probably what is called paper birch (*Betula papyrifera*) by Wells. (See reference No. 8.)

[10] This wood on examination under the microscope was found to fall in that group of which red maple and silver maple are members, according to Record (Economic Woods of the United States, p. 103). It was found to resemble microscopically the sample of silver maple (SM2) and was found to be like the latter in color of wood and other characteristics. Its microscopical structure and general color did not resemble those properties of authentic red maple. The sample (WM) and silver maple (SM2) were found to have decidedly higher specific gravities than has been previously reported for silver maple by Record (book mentioned above, p. 103), and Witham (Modern Pulp and Paper Making, p. 587), who list this value as being 38.8 and 32 pounds per cubic foot, respectively.

[7] Paper Trade Journal 82, No. 8, pp. 158-161 (February 25, 1926). (A reprint of this article may be obtained by writing to one of the authors.)

(through the courtesy of Messrs. Spear and Warner) in the form of normal, *sound* bolts of pulpwood of about ten inches in diameter and four feet in length. The specific gravities of these various woods as determined in this laboratory are given in Table 1. The corresponding weights per cord are given in the same Table and are based on the assumption that one cord is equivalent to 100 solid cubic feet of wood.[8] Each of the above logs was split and chipped to three different chip lengths by the procedure mentioned in the article referred to in the previous paragraph. The length of chip (with the grain) to which each log was cut is shown in Table 2.

TABLE 2

DATA ON ROTARY SODA COOKS

Experiment No.	Kind of wood	Length of chips (with the grain)	Air dry weight of chips taken	Moisture content of chips	Equivalent oven dry weight of chips	Volume cooking liquor taken [9]	Ratio of NaOH to bone dry chips	Total time of cook	Time at maximum temperature	Yield of pulp (o. d. wt. of pulp & chips)	Bleach (35% available chlorine) Requirement of pulp based on o. d. wt.[10]	Loss in bleaching (based on wt. of unb. pulp)
		in.	g.	%	g.	l.		hr.	hr.	%	%	%
1	Aspen (EP)	½	1814	6.6	1694	6.25	0.244	6½	5½	46.8	6.4	1.1
2	Aspen (EP)	½	1814	6.6	1694	6.25	0.244	6½	5½	49.1	9.0	1.1
3	Aspen (EP)	¾	1814	5.7	1711	6.25	0.242	6½	5½	48.3	8.7	1.4
4	Aspen (EP)	¾	1814	5.7	1711	6.25	0.242	6½	5¾	48.2	8.6	1.7
5	Aspen (EP)	1¼	1814	5.7	1711	6.25	0.242	6½	5¾	48.6	8.7	2.0
6	White birch (WB)	⅛	2268	7.8	2091	7.80	0.247	6½	5⅛	45.4	12.6	2.4
7	White birch (WB)	⅛	2268	7.8	2091	7.80	0.247	6½	5½	46.0	12.6	3.0
8	White birch (WB)	⅜	2268	6.8	2114	7.80	0.244	6½	5½	47.2	12.9	2.6
9	White birch (WB)	1	2268	5.0	2154	7.80	0.240	6½	5¾	47.2	13.5	2.0
10	White maple (WM)	½	2268	6.6	2118	7.80	0.244	7	5½	44.5	12.7	2.3
11	White maple (WM)	¾	2268	7.3	2102	7.80	0.245	7	6½	44.7	13.0	2.9
12	White maple (WM)	1⅛	2268	5.0	2154	7.80	0.240	6½	5½	45.7	14.6	2.5
13	Silver maple (SM2)	½	2268	11.0	2020	7.75	0.254	4½	3¾	46.5	14.9	2.0
14	Silver maple (SM2)	½	2268	11.0	2020	7.90	0.258	4½	3½	44.0	13.0	2.5
15	Silver maple (SM2)	¾	2268	11.4	2030	7.75	0.252	4½	3½	44.0	11.9	2.0
16	Silver maple (SM2)	¾	2268	11.4	2030	7.75	0.252	6	5	44.7	12.9	1.8
17	Silver maple (SM2)	1	2268	10.4	2040	7.85	0.254	4½	3½	44.8	13.8	2.7

Method of Cooking Used

In making a rotary soda cook, using a given lot of chips, the can (milk) containing these chips was thoroughly shaken with the cover in place to obtain as representative a sample as possible. The cover was then removed and exactly 4 pounds of aspen or 5 pounds of birch or maple chips (in the air dried condition) was weighed and put in the rotary digester which had been placed on end. Sufficient caustic soda cooking liquor was then added to the digester to give approximately a ratio of 25 parts of sodium hydroxide for every 100 parts of chips (based on its equivalent oven dry weight).

The per cent causticity of the cooking liquor, used in our experimental work, is about 7 per cent higher than that observed in the average soda pulp mill operation. However, it is generally conceded (work done by us on this factor confirms the observation of others) that the presence of sodium carbonate in the cooking liquor has practically no influence on the yield or quality of pulp obtained in the soda process, so this discrepancy can be disregarded.

Bleach Tests

About a third of each lot of air dried soda pulp obtained in these experiments was stored in an air tight Mason jar. Using these jar samples of pulp, bleach tests were later made by means of a slight modification of the method given in "The Manufacture of Pulp and Paper," Vol. III, Section 8, p. 14. The weights of pulp, computed to oven dry values, before and after bleaching gave data as to the losses on bleaching."

Experimental Results

Our results on aspen, white birch, white maple and silver maple indicate that very slight, if any differences in yield, bleach consumption or loss on bleaching for any of these species can be detected between chips of shortest length and those of greatest length within the limits of ½ inch and 1¼ inch.

Apparently the time required for the fresh cooking liquor to enter the innermost parts of the larger chips, the time required for more caustic soda to diffuse from the outside of the chips to the centers of the larger chips and the time necessary for the water soluble lignin derivatives and decomposition products to become uniformly diffused throughout the liquor phase are relatively short as compared with the total cooking time at the temperature and pressure under investigation. In this system the time required to complete a cook is most largely dependent on the slowest step in the series of events that collectively results in the resolution of wood to the form of pulp.

Evidently the slowest step is one unaffected by the length of chips (within limits stated). Such a step may be the chemical reaction involving hydrolysis or salt formation by means of caustic soda or such a step may be the physical effect of lignin molecules going from the solid phase into solution.

As for the significance of our yield figures it is of importance to point out the fact that in such experiments as we have conducted in our rotary soda digester no condensation of steam from an outside source is possible with our indirect method of heating.

Some idea of our ability to duplicate results in making two or more rotary soda cooks on a given material, according to the procedure which we have followed, may be obtained by comparing yields and quality of pulps obtained in experiments 1, 2, 3, 4, 6, 7, 13, and 14. The widest divergence in yields for a given material is seen to be in experiments 13 and 14 where there is a discrepancy of 2.5 per cent. In most cases, however, the difference in yield for similar cooks will be found to be well within one per cent.

It has been stated by Surface (*See* footnote No. 6) that "Minimum total duration of from 3 to 4 hours may be successfully applied to the cooking of aspen for bleaching pulps, provided the other cooking conditions are properly maintained." In our method of running rotary soda cooks we have succeeded in cutting the total cooking time to as low as 2½ hours for aspen and 4 hours for the hardwoods with a good resulting disintegration of the chips into a pulp.

The work of Surface (Footnote No. 6) has indicated that one can not approach too closely this "minimum total duration" without getting a screened pulp with numerous shives which work through the screen slots. Consequently, it would not be, perhaps, advisable to run mill cooks in much less than 5 to 6 hours by the soda process. However, to study the effect of varying the chip length of a given wood with cooks slightly longer than the possible "minimum," we ran a series on silver maple (Cooks 13, 14, 15 and 17 in Table 2) and found that only slight differences in yield resulted for chips of lengths from ½ inch to 1 inch.

This further confirms our conclusions derived from the 6½ hour and 7 hour cooks. Furthermore, there appeared to be very little difference in yield between a 4½ hour cook on silver maple and a 6 hour cook on the same material.

In Table 3 is given calculated yields of both oven dry pulp and air dry pulp (10 per cent moisture content) per cord of wood corresponding to the yield values reported in Table 2.

[8] American Pulpwoods, by S. D. Wells. Paper Ind. 5, No. 4, 642 ff.; No. 5, 797 ff.; No. 6, 961 ff. (July-Sept., 1923); Paper 32, No. 14, 7-14; No. 15, 6-8, 12, 16, 18 (July 25, Aug. 1, 1923).

[9] The cooking liquor had a specific gravity of 1.0705 at 18° C. This is equivalent to 9.54° Bé. Its caustic soda content was 6.17 per cent by weight or 66.1 grains per liter. Causticity = 97 per cent.

[10] Pulps No. 14 and No. 17 were bleached with a liquor having an available chlorine normality of 0.7725 and a free lime ($Ca(OH)_2$) normality of 0.0357. All other pulps were bleached with a liquor having an available chlorine normality of 0.6225 and a free lime normality of 0.0357.

[11] We are indebted to George F. Whiting for all tests in this report on bleach consumption and loss of weight on bleaching.

TABLE 3

YIELDS OF PULP PER CORD OF WOOD

Experiment No.	Kind of wood	Yield of pulp (oven dry weight of pulp & chips) %	Sp. gr. oven dry wood — lb. per cu. ft.	Yields of oven dry pulp: Unbleached pulp lb. per cord	Yields of oven dry pulp: Bleached pulp lb. per cord	Yields of air dry pulp: Unbleached pulp lb. per cord	Yields of air dry pulp: Bleached pulp lb. per cord
1	Aspen (EP)	46.8	22.32	1043	1031	1159	1148
2	Aspen (EP)	49.1	22.32	1098	1084	1219	1203
3	Aspen (EP)	48.3	22.32	1078	1060	1196	1178
4	Aspen (EP)	48.2	22.32	1076	1057	1194	1171
5	Aspen (EP)	48.6	22.32	1085	1061	1205	1179
6	White birch (WB)....	45.4	37.73	1710	1669	1899	1850
7	White birch (WB)....	46.0	37.73	1735	1681	1928	1869
8	White birch (WB)....	47.2	37.73	1780	1731	1978	1922
9	White birch (WB)....	47.2	37.73	1780	1743	1978	1938
10	White maple (WM)...	44.5	42.19	1876	1831	2081	2036
11	White maple (WM)...	44.7	42.19	1883	1830	2092	2035
12	White maple (WM)...	45.7	42.19	1928	1879	2140	2082
13	Silver maple (SM2)...	46.5	41.59	1932	1892	2144	2100
14	Silver maple (SM2)...	44.0	41.59	1830	1782	2032	1980
15	Silver maple (SM2)...	44.0	41.59	1832	1791	2032	1990
16	Silver maple (SM2)...	44.7	41.59	1860	1827	2064	2027
17	Silver maple (SM2)...	44.8	41.59	1861	1811	2065	2014

Table 4 gives the calculated amounts of bleach (35 per cent available chlorine) required per hundred pounds of pulp, based on both oven dry and air dry weights of unbleached pulp.

Conclusions

1. With chips having lengths, varying from 0.5 to 1.25 inch (with the grain) no appreciable differences in yield, bleach requirement or loss on bleaching can be detected for the species, *aspen, white birch, white maple, and silver maple.*

2. The above conclusions appear to hold regardless of whether the total duration of a cook is that commonly used in mill practice or only slightly longer than the minimum time possible for achieving a full pulping action on the chips.

3. The average yields of soda pulp under standard conditions for aspen, white birch, and white maple are 48.2, 46.4 and 45.0 per cent, respectively. Expressed as yields of air dry, bleached pulp per cord we get—from aspen—1,176 pounds, from white birch—1,895 pounds and from white maple—2,051 pounds. *These hardwood pulp yields are thus between 55 and 75 per cent higher on a cord basis than the aspen yields.*

4. Silver maple cooked 4½ hours appears to give practically the same yield as when cooked for 6 hours. Yields in either case are approximately the same on a percentage basis as yields of soda pulp from white maple which has been cooked for 6½ or 7 hour intervals.

5. The bleach (with 35 per cent available chlorine) requirement and loss on bleaching for the pulps studied average as follows: Aspen—8.3 per cent R, 1.5 per cent L; white birch—12.9 per cent R., 2.3 per cent L.; White Maple— 13.5 per cent R., 2.6 per cent L.; and Silver Maple—13.3 per cent R., 2.2 per cent L. (R., meaning bleach requirement and L., loss of weight on bleaching).

TABLE 4

BLEACH REQUIREMENTS OF SODA PULPS

Experiment No.	Kind of wood	Length of chips (with the grain) in.	Bleach requirement of pulp. Amount of bleach (35% available chlorine) in pounds needed for every 100 pounds unbleached pulp: Based on 100 lb. oven dry pulp %	Based on 100 lb. air dry pulp (10% moisture content) %
1	Aspen (EP)	½	6.4	5.8
2	Aspen (EP)	½	9.0	8.1
3	Aspen (EP)	¾	8.7	7.8
4	Aspen (EP)	¾	8.6	7.7
5	Aspen (EP)	1¼	8.7	7.8
6	White birch (WB).....	⅝	12.5	11.3
7	White birch (WB).....	⅝	12.6	11.3
8	White birch (WB).....	⅞	12.9	11.6
9	White birch (WB).....	1	13.5	12.2
10	White maple (WM).....	½	12.7	11.4
11	White maple (WM).....	¾	13.0	11.7
12	White maple (WM).....	1⅛	14.6	13.1
13	Silver maple (SM2).....	½	14.9	13.4
14	Silver maple (SM2).....	½	13.0	11.7
15	Silver maple (SM2).....	¾	11.9	10.7
16	Silver maple (SM2).....	¾	12.9	11.6
17	Silver maple (SM2).....	1	13.8	12.4

Salt and Its Effect in Soda and Sulphate Mills

SPECIAL INQUIRY No. 54

A member has submitted the following questions in regard to the effects of salt (NaCl) in soda and sulphate pulp mills:

1. Water—Temporary hardness ppm
   —Permanent hardness ppm
   —NaCl content ppm
2. Amount of white liquor per ton pulp (cu. ft.)
3. Cooking process—direct—indirect.
4. Wash water used on diffusers—cu. ft. per ton.
5. Salt cake—(a) Quantity as Na_2O used as makeup—lb.
   (b) Content of NaCl—%
6. Please discuss troubles experienced, if any, which could be attributed to:
   (a) Water containing NaCl.
   (b) NaCl in salt cake.

   NOTE—If difficulties have occurred where NaCl is present, it would be valuable to indicate where the trouble has taken place and the remedial measures taken.
7. Where salt (NaCl) is present, does it have any detrimental influence on the papermaking qualities of the pulp in regard to
   (a) Strength.
   (b) Sizing.
   (c) Color.
8. References to published articles bearing on the subject.

Replies to the questions with discussions will be transcribed in blank and issued as Special Report No. 54 to all who contribute towards it.

W. G. MAC NAUGHTON,
Secretary, TAPPI, 18 East 41st Street, New York.

Large Paper Shipments Through Champlain Canal

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., Sept. 20, 1926.—One of the largest and most valuable cargoes of paper to pass through the Champlain Barge Canal during the present season went through Fort Edward this week headed for New York City. The cargo consisted of newsprint and was consigned to the *New York American*. It was shipped from mills in Canada operated by the Hearst interest and required a number of canal barges, the fleet being in command of Capt. John Scott. The value of the shipment was estimated at $1,500,000.

This shipment was said to be the advance guard of a number of other large paper shipments from Canadian mills which are due to pass through the canal during the next few weeks. From now until the end of the navigation season it is expected that paper shipments through the canal will be unusually heavy because of the fact that when there was a scarcity of stock at the Canadian mills during the summer there was a scarcity of canal barges. Most of the Canadian paper mills are said to use the all water route to New York almost exclusively because of its lower cost.

Beveridge Paper Co. Sending Out Samples

INDIANAPOLIS, Ind., September 20, 1926.—The Beveridge Paper Company is now sending out to the trade a book containing samples of several of its special items, also samples of various special finishes.

TECHNICAL SECTION, PAGE 117

Measurement of Surface Temperatures.

I—Portable Thermocouple Device Compensated for Heat Losses

By M. W. Boyer and J. Buss

In many problems of heat transfer, investigators have been confronted with the difficulty of obtaining accurate surface temperatures. An important example is the problem of heat flow in pulp and paper driers, in which the quantitative consideration of the heat transfer coefficients necessitates the determination of the surface temperatures not only of the rotating drier shells, but of the moving sheet as well.

Probably the most important methods in use at the present time are the imbedded thermocouple, thermocouple and thermometer pads, and the radiation method. The imbedded thermocouple is the most accurate, but is limited in its application. The thermocouple pad usually consists of one or more couples backed by an insulating pad. The errors connected with this method are more or less evident. In the first place, when applied to the surface of a wall through which there is a small temperature drop, the poor heat transfer to the pad along with the thermal losses from the pad may result in low values. On the other hand, when applied to a wall through which there is a large temperature drop, there may be a building up of the surface temperature beneath the pad. Although these errors tend to compensate each other, their relative magnitude is unknown and there is no assurance of obtaining the true surface temperature. The radiation method is based upon the Stefan-Boltzmann radiation law and depends upon the black body coefficients of the radiating surface. The lack of accurate information concerning these black body coefficients, or the alternative necessity of calibrating the instrument for each surface, renders this method of little practical value.

Since none of these methods were considered suitable for obtaining true surface temperatures under various conditions, it was decided to develop if possible a device for this purpose.

Although the development of such a device was prompted by its possible use with moving surfaces, it was borne in mind that many kinds of surfaces are encountered in practice, such as metallic, lagged and fibrous, either moving or stationary. As the primary instrument for the measurement of the temperatures of these various surfaces, the thermocouple offered the most promise because of its ruggedness, accuracy, and ease of application. The use of the bare thermocouple, however, results in such large heat losses from the couple that it never reaches the temperature of the surface to which it is applied. The use of an insulating pad diminishes the error somewhat, but even with this, except in the case noted above, the heat losses are usually sufficient to prevent the couple from attaining the true temperature of the surface. It seemed possible, however, that these losses could be prevented by applying to the exposed side of the thermocouple sufficient heat to prevent any heat flow through the thermocouple. Under these conditions there should be no temperature drop from the surface to the thermocouple and the couple should indicate the true temperature of the surface. This is the principle of the so-called compensated thermocouple for surface temperature measurement.

In order to apply this idea to a practical device, it was necessary to develop a means of determining the absence of heat flow between the surface and the couple. It was believed that this could be accomplished by the use of an additional thermocouple, both couples being made in the form of disks, placed with their surfaces adjacent. Thus, if the disk in contact with the surface should show a higher temperature than the inner, or regulating, disk, it would indicate a heat flow from the surface to the disks, in which case heat would be supplied by a heating element until the two couples attained the same temperature. With this condition there would be no heat flow and the temperature of either couple should be the true temperature of the surface.

Massachusetts Institute of Technology, School of Chemical Engineering Practice, Eastern Mfg. Co., Bangor, Me.

* Reprinted from Industrial and Engineering Chemistry, Vol. 18, No. 7, page 728. July, 1926.

Description of Device

An instrument embodying these ideas was constructed. Silver, since it possesses high thermal conductivity and low specific heat, proved to be the most suitable metal for the disks. These were made approximately 2.5 cm. (1 inch) in diameter by 0.8 mm. (1/32 inch) thick. As it was desired to use the instrument at relatvely low temperatures, up to 149° C. (300° F.), the chromel-copel thermocouple combination was selected. This gives the greatest e. m. f. deflection per degree temperature difference of any of the satisfactory combinations in common use at present. The thermocouple wires, No. 22 gage, were imbedded in the disks and soldered flush with the disk surface at points diametrically opposite. Before assembling, the two couples were simultaneously calibrated in a Nujol bath by comparison with a thermometer. The compensating heating element was made from chromel resistance wire wound in the form of a grid. These units were assembled in a block of wood approximately 8 cm. (3 inches) square by 13 mm. (½ inch) thick, as shown in Fig. 1. The heating element grid was first placed in the block from which it was insulated by sheet asbestos. Next to the grid and separated from it by sheets of mica with an intervening air space, was placed the inner thermocouple disk. This in turn was insulated from the outer disk in a similar manner. Sheet asbestos with sodium silicate as a binder was used for building up the surface of the block flush with the surface of the outer disk. Special care was taken to insulate the thermocouples from the asbestos, as small amounts of moisture in the sodium silicate binder would cause short circuits. Connections to the compensating grid were made through binding posts set in the block. This constituted the head, to which was attached, by means of a flexible joint, a handle made up of ⅜-inch aluminum pipe. The thermocouple and grid leads coming from the head were insulated from each other by "spaghetti" tubing and for convenience taped together to form a cable.

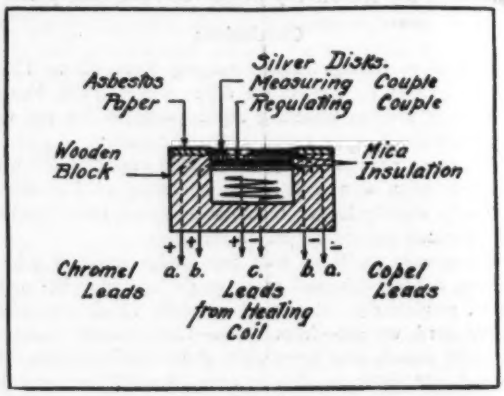


FIG. 1

Section through Head of "Compensated Couple."

The four thermocouple leads were brought to the cold junction, which was made up of four glass U-tubes filled with mercury and immersed in a lagged jar containing salt solution. The method of connecting the cold junction to the millivoltmeter is shown in Fig. 2. The wiring was so arranged that with the key open the e.m.f.'s of the two couples were opposed, in which case the millivoltmeter would indicate the potential difference between the two couples. For convenience, the couple connections were

made so that the millivoltmeter read on scale when the measuring disk was the hotter. With the key closed, the regulating couple was short-circuited and the measuring couple connected directly to the meter.

The current through the heating grid was regulated by a 30-ohm rheostat in conjunction with two 100-watt lamps, using current from a 110-volt a. c. light socket. These were connected, as shown in Fig. 2. The two lamps, connected in parallel, were placed in series with the heating element, while the rheostat was shunted around it. In order to limit the current that could be put through the rheostat to its safe carrying capacity, it was so constructed that there was always at least one ohm in the circuit, unless the rheostat was short-circuited. This arrangement served as a convenient means for controlling the temperature of the grid.

Wiring of Control Board for "Compensated Couple"

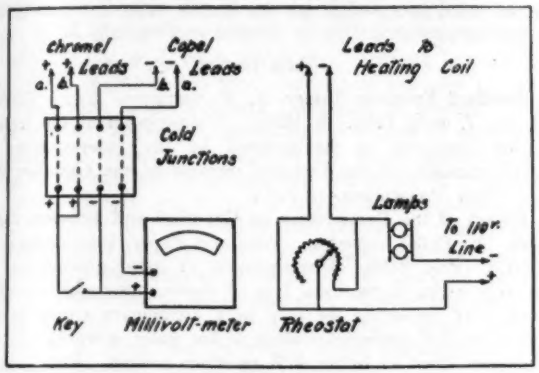


FIG. 2

Manipulation

The services of two men were required, one to apply the head, the other to operate the rheostat and read the millivoltmeter. The head was held firmly against the surface whose temperature was required. With the key open the millivoltmeter would usually indicate a positive reading, showing the measuring disk (the one touching the surface) to be the hotter. The lamps were then screwed down and the rheostat adjusted until the meter reading was zero. The key was then immediately closed and the reading noted. If upon opening the key the meter reading returned to zero, the true e. m. f. of the couple had been obtained; otherwise it was necessary to repeat the operation. With a little practice, however, the true temperature was usually obtained on the first attempt, requiring not more than two minutes. Sometimes, with successive applications to surface of widely varying temperatures, the head would be hotter than the surface, as indicated by a negative differential reading. In this case the head was allowed to cool to a temperature somewhat lower than that of the surface and the usual procedure followed.

Since this instrument was designed for relatively low temperatures, there was no objection to the use of tin solder in the construction of the disks. Although this limits the application of this particular instrument, a similar instrument could be constructed for use at higher temperatures. When the head was held at one place on the surface of a stationary wall through which there was a large temperatture drop, the temperature of the surface beneath the head built up. This condition was avoided by slowly moving the head over the surface. With moving, surfaces, however, for which the instrument was originally designed, there was no difficulty in this respect.

An investigation of the accuracy and application of this device has been conducted by F. W. Adams and R. H. Kean, the results of which are to be presented in a subsequent article.

The Paper Drying Problem

Editor Technical Section.

I have read with interest the greater part of an article entitled "The Drying Problem," by J. M. Arnot, published in the June 24 issue of the Paper Trade Journal. This article contains statements with reference to the conditions which exist inside a drying cylinder, which I feel misled a great many people who read it.

Appearing as it does under the section sponsored by yourself, I am taking the liberty of calling this matter to your attention. I refer particularly to the action of the condensate in drying cylinders, and to the statements with reference to the action of siphons in removing this condensate.

Near the top of page 56, Mr. Arnot states that while the peripheral speed of around 350 to 400 f.p.m. a fixed siphon pipe is useless, and that at about 400 feet per minute "the accumulated water forms a complete lining and continues to revolve as a water cylinder within, and at the same speed as the metallic one." He further states that sipons and buckets at that speed connot possibly remove any water. He does not state the diameter of the cylinder, but I assume he means cylinders of 4, 5 or 6 feet such as are used commonly in the industry.

Further along on page 56 under the heading "The Problem Illustrated," he definitely refers to the condition existing in a 5 ft. diameter drying cylinder. I personally have not at hand data regarding the action of condensate in 4 and 5 ft. diameter cylinders but I have seen such data, some of it I believe was published by the Pusey & Jones Company. I have the data covering 6 ft. drying cylinder, and have personally made tests with one end of the drier completely open and the phenomenon of the water following the shell and of the ability of siphons to remove condensate have been proved beyond the speed of any existing paper machine—1200 f.p.m. and over. Up to this speed only a very thin film of water follows the shell, and siphons satisfactorily remove the condensate if the system is properly designed and operated.

I am not anxious to enter into any controversy but I am jealous of the good name and influence of the Technical Association, and believe that information published under its authority should not be misleading. I think it should be a simple matter for you to obtain data similar to that which I have given you, which would cover 4 and 5 ft. diameter driers, in which event this subject might well be published to counteract any erroneous impressions due to the article referred to.

A MEMBER.

Spaulding Paper Co. To Start Building

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 24, 1926.—The board of directors of the Spalding Pulp and Paper Company, Newberg, Ore., held a meeting September 10, at which time action was taken assuring the immediate erection of the mill. W. R. Bowles, of Portland, was elected to membership on the board, which was already composed of Charles K. Spaulding, Salem; J. C. Compton, McMinnville; Leland S. Johnson, Eugene; H. M. Hawkins, Salem; Lynn B. Ferguson, George W. James, R. J. Moore and H. C. Spalding, Newberg.

The purchase of a site was authorized and an executive committee appointed to have plans prepared for the construction of the first unit. This committee comprises C. K. Spaulding, chairman; H. C. Spaulding, J. C. Compton, R. J. Moore and Leland S. Johnson.

Initial plans for the building of this $1,250,000 plant have been under way since last January, with Newberg selected for the site, but much time was necessary to get such a comprehensive program under way, and although frequent meetings have been held, very little of an official nature had transpired until the meeting aforementioned.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Paper Making Industry

Clarence J. West, *Chairman*

ANALYSIS AND TESTING

Preparation of Starch Solution for Use in Iodometric Titrations. C. L. Alsberg, E. P. Griffing and J. Field, 2nd. J. Amer. Chem. Soc. 48, 1299-1300 (May 1926). Dry starch is ground in an ordinary pebble mill until under the microscope most of the granules are found to be cracked or frayed and under the polarizing microscope the starch, mounted in some anhydrous medium such as glycerol or cedar oil, no longer shows the black cross in most of the granules. About 2% of ground starch is sifted slowly into distilled water that is being agitated by an electrical stirrer, and agitation continued for an hour. The liquid is then centrifuged at about 2,000 r.p.m. for one-half to one hour, and the supernatant solution decanted and stored in an ordinary bottle with enough toluene to cover the surface. The solutions show little or no Tyndall effect, contain from 0.1 to 0.2% of starch, and remain clear for months, since retrogradation is extremely slow.—A.P.-C.

Analysis of Water for Use in Making Paper. J. E. Minor. Paper Trade J. 82, No. 15, 62-65 (Apr. 15, 1926). Discussion of the standard methods of water analysis of the American Public Health Association, with a view to simplification and greater adaptation to paper mill use (exclusive of water for steam boilers).—A.P.-C.

Report on Methods for Testing Chemical Lime. O. L. Cook. Paper Trade J. 82, No. 11, 54-55 (Mar. 18, 1926). Two causticizing tests for quicklime are recommended as suitable for routine testing. (1) *H. L. Joachim Test*—Bring a solution of 5 g. of sodium carbonate in 250 cc. of water to a boil, add 2.5 g. of the lime ground to pass an 80-mesh sieve, boil gently for 30 min. keeping the volume of the solution constant by adding water, transfer to a 250 cc. graduated cylinder (to observe the rate of settling and the volume of the sludge), titrate 5 cc. of clear liquor with 0.1 N hydrochloric acid and methyl orange as indicator (this gives $NaOH+Na_2CO_3$); mix a 25 cc. portion of clear causticized solution with 50 cc. of saturated barium chloride solution, make up to 250 cc., let settle, and titrate 50 cc. of clear solution with 0.1 N hydrochloric acid (this gives NaOH). The causticity of the solution (NaOH) ($NaOH+Na_2CO_3$) should be about 82 to 85%. (2) *Mead Pulp & Paper Company's Test*—Dissolve 200 g of sodium carbonate in about 1.5l. of warm water add 100 g. of a representative sample of lime crushed to about the size of a pea, heat until the lime slakes, bring to a boil, boil for 1 hr., let settle, and determine the causticity by titrating an aliquot with 0.1N hydrochloric acid using phendphthalein and methyl orange as indicators. The modified Scaife method is recommended as a standard method for testing hydrated lime; and the following method is suggested as an alternate method which, while not as accurate, gives very reliable comparative results. Dissolve 1 g. of lime in 100 cc. and the following method is suggested as an alternate method which, while not as accurate, gives very reliable comparative results. Dissolve 1 g. of lime in 100 cc. of freshly boiled distilled water in an Erlenmeyer flask, let stand to ensure precipitation of magnesium hydroxide(if time does not permit, precipitation may be hastened by heating the mixture for 30 min. near the boiling point,) to the cooled mixture add 44 cc. of approximately 0.1 N sodium bicarbonate made just neutral to phenolphthalein, shake 15 min., let stand 4 hr., filter into an 1 l. volumetric flask, make up to volume, and titrate a 50 cc. aliquot with 0.1 N hydrochloric acid with phenolphalein as indicator.—A.P.-C.

Determination of Lignin in Wood and Wood Pulps. W. J. Mueller and W. Herrman. Papierfabr. 24, 185 (Mar. 28, 1926). As an aid to the rapid filtration of lignin the following procedure is recommended: A sufficient amount (10 to 40 cc.) of a 5% solution of resublimed naphthalene, free of all residues, in alcohol is poured into double the volume of water to form a filtering mat of the desired thickness in the apparatus employed. After filtration of the lignin, and subsequent washing, the crucible is placed in a beaker which is immersed in a water-bath and the napthalene sublimed under the hood. Finally the crucible is dried in the usual way and weighed. In this manner the precipitate is not contaminated with the filtering medium.—J.L.P.

Pulp Testing

Standard Freeness Tester. E. P. Cameron. Paper Trade J. 82, No. 7, 49-52 (Feb. 18, 1926). A description of the freeness testing apparatus as standardized by the Sub-committee on Standardization of the Technical Section of the Canadian Pulp and Paper Association.—A.P.-C.

Report of the Committees on Chemical and Physical Standards. E. Parke Cameron. Pulp and Paper, International No. 132-133 (Feb. 1926). Disintegration of dried groundwood for freeness testing in the usual type of disintegrator was incomplete, even after subjecting the pulp to a preliminary treatment with live steam and continued soaking in hot water, whenever the pulp had been dried to below 40% moisture content. Promising results were obtained with a butcher's meat mincer provided with a steam line midway down the barrel so that the stock could be steamed during its passage through the mincer. The proposed standard method for the strength testing of pulp calls for the bursting of the test sheets (Mullen tester) while they are in the oven dry condition. Results showed that the strength increases very rapidly during the first five minutes after the sample is withdrawn from the oven, reaching a maximum after about 45 minutes; from this point on the strength falls off gradually with increased standing, up to 45 minutes, where it appears to reach equilibrium. The amount of moisture absorbed by over-dry sheets is very much greater when placed in the open air than when placed in a dessicator at the same relative humidity, for periods up to 45 minutes. It is probable that the time interval required to make the folding and tensile strength determinations will introduce a sufficient error to affect the results when tested in the oven-dry condition.—A.P.-C.

Analysis

Use of the Strip Method for the Sampling and Testing of Wood Pulp for Moisture. H. A. Helder. Paper Ind. 8, 91-92 (April 1926); Paper Mill 49, No. 14, 24, 26 (April 3, 1926). Results are given of a number of comparative tests by the strip and disc methods of sampling roll pulp from pulp-drying machines, showing that the strip method gives more consistent and accurate results than the disc method.—A.P.-C.

Weighing, Sampling and Testing Wood Pulp. Paper Trade J. 82, No. 11, 51-53 (March 18, 1926). Text of the official rules proposed by the joint committee representing the American Paper and Pulp Association, the Association of American Wood Pulp Importers, and the Technical Association of the Pulp and Paper Industry.—A.P.-C.

Electric Oven for Determining the Moisture Content of Pulp Designed at the French School of Paper Making, Grenoble. M. Aribert and M. Fallot. Papier 28, 1303-1305 (Dec. 1925). The oven is cylindrical in shape. It contains 5 perforated sheet metal shelves each of which can carry 10 samples in perforates alu-

TECHNICAL SECTION, PAGE 120

minium baskets. The balance pan is inside the oven and in the center. The shelves are rotatable about the vertical axis of the oven, and a rod is provided by means of which any sample can be pushed on or pulled off the balance pan without opening the oven. Three electric elements are provided for heating, the central one compensating ratiation losses, and the other two, which are completely independent of each other, automatically maintaining the temperature constant to ±0.5°C. The elements are designed so that the temperature cannot rise above 105°C., even should the thermostats fail to work.—A.P.-C.

Dryness Determination of Ground Wood Which Has Been Subjected to Hydraulic Pressure. Anon Zellstoff U. Papier, 6, 76-77 (Feb. 1926). The dryness content of pressed ground wood pulp depends on the amount and duration of the pressure exerted, and the slowness and temperature of the stock. The moisture content is not uniformly distributed. The dryness test is determined on 3 samples in the usual way.—J.L.-P.

A Method for Determining the Strength of Sulphite Wood Pulps. R. N. Miller. Paper Trade J. 82, No. 16, 44-47 (April 22, 1926). The method which is described in detail, is a modification of the one which has been standardized and used for several years at the Forest Products Laboratory at Madison. The change consists essentially in increasing the amount of water and decreasing the weight of pebbles in the pebble-beater charge, beating for 80 min. and sampling at the end of 20, 40, 60 and 80 min. for the strength test, instead of beating separate portions for 20, 40, 60 and 80 min., and testing when practically ovendry with the Mullen tester (5 pops in not over 30 sec. altogether instead of testing with the Ashcroft tester at 72° F. and 65% relative humidity. The details of the manipulation for both methods have been worked out with the objects of accuracy, speed and reproducibility in mind, and have been found serviceable in the improvement of paper making processes.A.P.-C.

Interpretation of Results in Testing Sulphite Wood Pulp. R. N. Miller,Paper Trade J. 82, No. 16, 48-51 (April 22, 1926). A comparison and discussion of results obtained by the "old" and "new" methods (preceding abstract) on commercial sulphite pulps widely variant in properties and representing the results of a wide variety of cooking conditions, and on a large number of sulphite pulps made experimentally at the Forest Products Laboratory, show that the two methods give distinct types of results suggest different applications. The "old" method is eminently suited to the investigation of the type to which a pulp belongs and to the correlation of cooking conditions with pulp properties. The "new" method is suited to the rapid mill control necessary to keep production of a certain type of pulp up to standard. A.P.-C.

Paper Testing

Atmospheric Conditions for Paper Testing. Minority Report of Tappi Paper Testing Committee. E. O. Reed. Paper Trade J. 82, No. 18, 55-57 (May 6, 1926). Standard atmospheric conditions of 70° to 75° F. and 50% relative humidity are recommended, and reasons given for the recommendation. Majority Report of TAPPI Paper Testing Committee. B. W. Scribner. Paper Trade J. 82, No. 18, 57-58 (May 6, 1926). Standard atmospheric conditions of 70° to 75° F. and 65% relative humidity are recommended and reasons given for the recommendation. —A.P.-C.

Water Absorption by Different Fibers Under Different Conditions of Atmospheric Moisture. H. Fay. Zellstoff U. Papier, 6, 201-203 (May 1926). The moisture content of unbleached and bleached pulps composed of aspen, straw, linen and esparto fibers is determined under different relative humidities, ranging from 32-80%. To eliminate wavy edges in paper, large variations in temperature should be avoided.—J.L.P.

Water Resistance of Paper. Anon. Zellstoff U. Papier, 6, 164 (Apr. 1926). An outline of the tests recommended by the Bureau of Standards, Washington, for testing the water resistance of paper.—J.L.P.

The Testing of Blotting Paper. R. Cornely, Zellstoff U. Papier, 6, 120-122 (Mar. 1926). Using the Dalen apparatus for testing blotting papers, which method is preferable to the Klemm test, an investigation concerning the influence of thickness, filler content, surface, and other variables of blotting papers is reported. Data on 79 papers are tabulated. The best blotting paper leaves an ink stain less than 15 mm. in length by the Dalen test.—J. L. P.

A Study of the Eastman Universal Colorimeter for Determining the Color of Paper. H. L. Peckham and Walter Brecht. Paper Trade J. 82, No. 17, 47-54 (April 29, 1926). A description of the principle, operation and precision of the Eastmann universal colorimeter, with a preliminary study of its application to color problems in the paper industry. The instrument operates on the subtractive principle and any desired color is obtained in the comparison field by the subtraction of certain parts from the white light use for illumination of the comparison field. This subtraction is obtained by the use of three dyed gelative wedges (red, green and blue) which vary in thickness from zero at one end to a maximum at the other. An investigation of the precision limits showed that error-field of the measurements of an average observer for paper of the red-yellow group is expressed in an approximate manner by the following figures: for red±1.0%, for yelloow±2.3%, for neutral±4.1% Five papers were tested and numerical characteristics of the two-sidedness of each were obtained, consisting of the differences in the amount of every color component present in the top side and in the wire side of the paper, the difference being expressed in per cent. In some cases, particularly as far as neutral is concerned, the actual color differences were smaller than the error-limits of the observers. Results obtained on three papers before and after being exposed to the action of an Atlas fadometer indicated that the instrument can be used satisfactorily for determining color changes when paper has been subjected to fading action. A prelimniary investigation of the relation between two-sidedness of paper and the color compositions of the corresponding back waters indicated that those colors appearing in the back water in the largest amount are least present on the wire side of the paper as compared with the top side. A.P.-C.

Permanence of Paper. Gosta Hall. Paper Trade J. 82, No. 14, 52-58 (April 8, 1926). "Durability" of paper involves its capacity to preserve its original properties when in use ("physical durability") and its capacity to preserve its original properties when being stored or kept under normal conditions ("chemical durability" or permanence.) The physical durability depends on the physical properties of the paper, and the chemical durability is dependent chiefly on the chemical properties. The results of an investigation by means of accelerated aging tests (action of light and of heat) of the factors influencing the permanence of paper, lead to the following conclusions: (1) The folding resistance of bleached sulphite paper falls off much more rapidly under the action of heat or light than that of rag paper, indicating that sulphite papers are less permanent. (2) No great difference was found in the behavior of papers made bleached linen, bleached cotton and unbleached cotton rags. (3) The permanence of paper made of mixed fibrous materials is approximately the arithmetical mean of the permanence of its components. (4) The purer the cellulose (i. e., the higher the alpha-cellulose content and the lower the copper number of the pulp), the higher the degree of permanence of the paper. (5) Rosin sizing increases the acidity of the paper and probably reduces its permanence as compared with unsized paper. (6) The deterioration in the permanence of the paper through rosin sizing, however, is probably not great enough to prevent its use for papers which require high permanence, provided undue excess of alum is avoided. (7) Rosin sizing causes immediate decrease in the folding resistance as compared with the same paper in an unsized condition. (8) Substitution of aluminium acetate for aluminium sulphate in rosin sizing does not appear to possess any

advantage from the standpoint of the permanence of the paper. (9) Tub sizing with glue causes an immediate increase in the folding resistance, but this increase is lost comparatively rapidly on exposure to both light and heat and when the paper is stored at ordinary temperature. (10) The external acidity(due to the aluminium sulphate added to the glue used in the tub sizing process) has little or no effect on the permanence of the paper. (11) The strength imparted to a paper by continued hydration of the fibers during the beating process can be considered permanent. (12) Use of a moderate quantity of chemically inert mineral fillers seems to exert a beneficial rather than a detrimental action on the permanence.—A.P.-C.

The Stiffness of Paper. Anon. Zellstoff U. Papier, 6, 77-78 Feb. 1926). The stiffness test for papers and its interpretation are briefly discussed.—J.L.P.

Removing Water from a Moist Web of Paper. E. C. R. Marx. Eng. pat. 246,048, Jan. 21, 1926. Either before passing the paper through the presses or before delivering it to the driers, steam is applied to the sheet with sufficient force to cause it to penetrate into or through the sheet and drive out water by mechanical displacement, and at the same time raising the temperature of the sheet and of the remaining moisture to approximately 200°F.—A.P.-C.

Charts for Use in the Rapid Calculation of Steam Consumption in Drying. A. Ruby. Papier 28, 1321-1332 (Dec. 1925). Calculation of steam consumption in drying paper from operating conditions (temperature and moisture content of sheet entering and leaving driers, temperature and humidity of air leaving the paper machine, outside and paper mill temperatures, etc.) is a long and tedious operation. The author gives a number of charts by means of which these calculations can be very considerably simplified. The article cannot be abstracted satisfactorily.—A.P.-C.

Chain Drive for Drying Cylinders. E. E. Berry assignor to Beloit Iron Works. U. S. pat. 1,563,342, Dec. 1, 1925. In a drier unit, one of the rolls is driven directly from some source of power, and the others are driven from the first drier by means of a sprocket chain. Means are provided for adjusting the tension of the sprocket chain.—A.P.-C.

Process and Apparatus for Removing Air and Water from Paper Machine Driers. V. D. Simons. U. S. pt. 1,572,448, Feb. 9, 1926. A current of heated water is passed through an ejector in the drier to create a suction and thereby withdraw the air and moisture from the drier. The air and water are separated, and a portion of the water is heated and used for supplying the ejector.—A.P.-C.

Drying of Paper. J .Melrose Arnot. Paper Makers' Monthly J. 64, 97-100 (March 15, 1926); Paper Maker and Brit. Paper Trade J. 71, 241-243A (March 1, 1926); World's Paper Trade Rev. 85, 732-738 (March 5, 1926); 826-830 (March 12, 1926). With a peripheral speed of the driers of about 350 ft. per min. the rotation of the drier roll carries the condensate with it to a sufficient extent to prevent the ordinary siphon pipes from removing the condensate; at 400 ft. per min. the ordinary catch box has but a low efficiency; and at about 490 ft. per min, centrifugal force predominates and the condensate forms a complete lining to the roll and rotates at the same speed. Distribution and rotation of the water can be prevented by freely suspending a weighted stop plate or internal doctor from the center of the drier roll, so that its lower edge just clears the roll. In order to prevent the water from rising and passing over the plate, a deflector or flang is fixed at right angles to the face of the plate and at some distance from the rool, the water being thus compelled to pass into the channel so formed. By making the stop or baffle plate in the form of a scoop terminating in a scroll or volute trough, the bottom of which lies in the same plane as the lower portion of the water discharge pipe which passes through the cylinder trunnion, the force acquired by the water is utilized to cause it to leave the drier roll.—A.P.-C.

Drying Cylinders. S. C. Bullen. Eng. pat. 243,509. In this improvement spiral, trough-shaped passages, each making two or more convolutions, are formed in or secured to the end of the cylinder, the passages opening into the cylinder at the circumference and terminating in a central chamber connected to the outlet nozzle.—A.P.-C.

Drying Board. H. Haas. Eng. pat. 246,655. In drying chambers the circulating fans have been generally arranged at the top of the side compartments and by their action the hot air has been driven upwards about the suspended goods and again withdrawn by the fans at the top of the heating compartments. In this improved apparatus the current is reversed, making the heated air travel downwards from the top of the chamber to the bottom, where it re-enters the heating compartments at the side of the drying tunnel. To effect this the circulating fans or turbines are put at the very bottom of the apparatus and below the heating devices in such a manner as to draw the heated air downwards, pass it into the heating compartments at the bottom and side of the apparatus, and to re-deliver it at top outlets and such other intermediate outlets as may be deemed suitable. By thus reversing the direction of flow of the hot air, the higher stretches of the material dry first and the lower stretches last. The result is that the water contained remains longer at the bottom and serves as a counterweight to keep the material well stretched.—A.P.-C.

Paper Specialties

Khanbaligh and Some Other Ancient Asiatic Papers. R. Bouvier and L. Vidal. Pulp and Paper International No., 99-102 (Feb. 1926). A description of Khanbeligh paper, an exceptionally high grade, ancient, Persion paper of Chinese manufacture, of two samples of Chinese papers of the 15 and 17 centuries, respectively, of two samples of Persion papers of the 10 and 12 centuries, respectively, of a Syrian paper of the 12 century, and of a Turkestan paper of the 10 century, all of which are taken from old dated manuscripts.—A.P,C.

Tori-Kusa Paper. T. Reifegerste. Wochbl. Papierfabr. 57, 359-360 (Mar. 27, 1926. Tori-kusa paper often called Hanakusa, grass is utilized in the manufacture of ton kusa paper commonly termed rice paper.—J.P.-C.

Whatman Papers and Their Manufacture. World's Paper Trade Rev. 82, 1338-1343(April 23, 1926). Outline of the process of manufacture of hand made papers at W. & R. Balston's Springfield mill, Maidstone, Kent and of the developments of the firm.—A.P.-C.

Process for the Manufacture of Safety Paper. M. Reinheimer. Ger. pat., 416,302. Papier Fabr. 24,133 (Feb. 28, 1926). After adding pulp, clay, dyestuffs, ultramarine blue and size to the beater and mixing the same, about 10 g. of finely pulversized nickelplated iron for every 400 g. paper stock are added. The mass is througly mixed, and the sheet is made in usual manner. The resulting paper is magnetic.—J.L.P.

Manufacture of Safety Paper. M. Reinheimer. Ger. pat. 416,303. Papierfabr. 24,94 (Feb. 7, 1926). Moist paper is covered with designs, etc., of nickel-plated iron powder couched on another moist sheet.—J. L. P.

Process for Waterproofing Cellulose Filter Paper, Etc. R. Wolffenstein and A. Marcuse. Ger. pat. 426,428. Zellstoff U. Papier, 6, 173 (Apr. 1926); Papierfabr. 24,261 (Apr. 25, 1926). Cellulosic material is treated with 10% thionyl chloride dissolved in benzol.—J.L.P.

Corrugated Paper Board & Its Production and Application. Anon. TEER, vol. 1 (1926); Zellstoff U. Papier, 6, 157-159 (Apr. 1926). Descriptive.—J.L.P.

Contents of An Old Sample-Book. A. Vander-Stichel. Papeterie 48, 32 (Jan. 10, 1926). Comments on a formula for black paper found in a sample book fifty years old, more particularly from the standpoint of cost price and selling price. The paper, though of excellent quality, was evidently sold at a loss. The weight per unit area of the paper frequently influences considerably the cost of production, and the price of a given grade should not be the same for all weights.—A.P.-C.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

Tracing That Average 28 Per Cent Loss*

Methods That Proved Successful in Encouraging Production and Economy

By C. U. Carpenter, Gen. Mgr., Frigerator Division, General Necessities Corp.

(*Continued from Cost Section of Sept.* 16, 1926)

A preceding article showed the causes and sources of many losses in manufacturing operation and indicated remedies. This article carries along the same thought, taking up first some of the "sore spots" that may exist even in your organization, and then from an actual example showing how similar conditions were corrected.

Importance of the Job-Boss

Herein lies the importance of the small jobs away down in your shops that call for limited leadership. The job boss-ship where a man, who himself works at the bench, still has a limited control over a small group of workers upon his job. As I said before and again emphasize, this little job represents that first rung on the ladder of promotion. If he makes that his next step is to assistant foreman and then to foreman. If he cannot make it, the chances are that he will never make the rest of the trip upward.

Effect Upon You and Me

Suppose you and I were on a job, with twelve men employed. You were the most efficient worker, I one of the poorer ones. I had the substantial advantage of being a relative of our superior. The old job-boss quits. There's your longed-for chance. Get it? Why, are you not the best man on the job? Well, Monday morning we show up and there I am in charge of that coveted position. What would be your reaction? The same as every other man of the group. "Oh—! what's the use." All of your interest, your enthusiasm gone. You simply have a "job" and then you work only to "get by" with a heart full of resentment every hour of the day.

How is it possible to build up a real organization of live workers upon such a rotten basis? It cannot be done. Suppose, on the other hand, that when you arrived Monday morning you found the foreman and superintendent waiting for the group with the records that showed the relative output of each man on the job; that they would announce that the man who had the best record would win the promotion; that they would read the record of each and every man there and would announce that you got the prize because of efficiency. What a difference there would be in the feelings of every man there. The best man did win and nobody had a kick coming. I can assure you that the effect is electrical.

But, again, who is to blame for the first condition? You, Mr. Manager. No one else.

Therefore, in addition to paying good wages, let us get our standard production rates upon proper basis so that we can guarantee that our wage rates will not be reduced and let the men "cut loose." Let us arrange matters so that the fear of unjust discharge will no longer disturb the men's minds. Let's absolutely cut out any chance for unfair promotion practice and base promotion upon the basis of merit. You will have some surprising results. You will find that old 28 per cent loss factor disappearing.

An Actual Example

In all of this I am not indulging in any pretty theory that has never been tried out. It has been installed in many shops with from 120 employees to 8,000 employees and has invariably been successful. It is being done in thousands of small shops every day as these factors are taken care of by the owner of the shop himself. He well knows that his success with his few men is locked up in the fairness with which he and his organization treat his men. He doesn't know it, he hasn't got a single printed form, he has no system to care for it, but he's doing it all the same because he is looking out for just such matters himself. Here is an actual case where the plan worked admirably with over 8,000 employees.

The Recording and Computing Machines Company were producing Russian and American fuzes for over three years. After America entered the war we centered on fuzes, panoramic sights, aiming circles, and other articles requiring precision.

Owing to the prevailing labor turnover, we faced a difficulty as the loss of workers skilled in this precision production was serious. We made a rapid but thorough survey and found in full bloom, as I expected, all of these elements which beget inefficiency and dissatisfaction.

Rates of production had been set by guesswork.

There was no effort made to help the workers learn their jobs. They were "fired" indiscriminately without regard to merit. We found departments nicely loaded up with various members of a family. As for promotion, brother John or uncle Bill or perhaps cousin Mary got the desirable jobs. They were always first on the list. The conditions were just about the same as in the average shop.

Action Taken

The first thing we did was to determine our standards for hourly outputs on each job. We had to do this rapidly so that, instead of trying out and making time studies of each job, we classified similar jobs together by groups; made careful time studies to determine this standard output on those jobs that were fairly representative of a group, and then, by making comparisons, established our standards upon all those within each group. Thus the work was simplified and hastened.

We then established a bonus system of pay based upon these

* From Manufacturing Industries.

rates and made a written announcement that these rates would not be reduced. The first results were as astounding as anything that Mr. Hoover has reported. Production jumped up and costs came down.

Our costs became so much lower than the costs of shops doing similar work that much of this work was transferred to us.

We installed the simple system explained below whereby we secured from the time and production data that is always on the workman's time ticket his average hourly rate of production. By placing this record upon individual workers card, we at once established a simple way to compare each worker's actual rate of production with the standard which he should have produced. We figured his or her percentage of efficiency from these figures of what they actually produced against what they should have produced.

Classes According to Efficiency

We established classes into which the workers were grouped. Class A included those who produced from 90 per cent upward of the standard rates; Class B included those from 70 to 90 per cent, and Class C included the beginners or those whose poor rating would soon get them into trouble.

Class A, in addition to their exceptional earnings, had the assurance that, in case lay-offs became necessary, at any time, they would be last to suffer. In other words, they were assured of a steady job. It is well to give them special buttons to wear. They are proud of being the shop "top-notchers." In case group insurance is in effect, it is well to provide Class A with better forms of policies upon a more liberal basis. In other words, it pays to make Class A as attractive as possible.

If you have any doubts as to their estimate of the value of being in Class A, you should see their efforts to keep from dropping out of it once they are included therein.

PRODUCTION RATE CARD
NATIONAL MANUFACTURING COMPANY

Date.....

Name.....Check No. .....Standard Hourly rate production.....

Department.....Job.....

Week Ending	Average Hourly Production	Per Cent Efficiency	Scrap Per Cent	Net Per Cent Efficiency	Class

Complaints.....

.....

Employment Date.....Quitting Date.....

Why.....

FIG. 1

Production Card Used Where the Operator Works Continually Upon One Job

Inasmuch as a worker was notified each month as to what class he was in those in Class B were watching their records and striving to get into Class A. If they remained in Class B over 60 days, an investigation was made to get at the reasons. There might be some form of physical disability or some lack of experience that prevented them from winning the button. Whatever it might be, the problem of improving them was approached, not in a critical or arbitrary fault finding manner but in a helpful way. In a majority of cases they were assisted to improve their condition. This procedure made friends for the company among the working force.

Class C included the beginners or the hopelessly inefficient. Even these latter were not treated arbitrarily if they showed any disposition to better themselves. Effort was made to fit another job to them before they were discharged. The beginners, knowing that their record was observed once a month, made every effort to improve instead of "taking it easy."

These efficiency cards were used to prevent unfair discharges; and to force promotions on merit alone as will be described later.

PRODUCTION RATE CARD
NATIONAL MANUFACTURING COMPANY

Date.....

Name.....Check No. .....

Department.....General Character of Work.....

Week Ending	Job No.	Standard Production	Actual Hourly Production	Per Cent Efficiency	Scrap	Net Efficiency

Complaints.....Class.....

.....

Employment Date.....Quitting Date.....

Why.....

FIG. 2

Production Card Where Operator Works on More than One Job

Some of the old-timers will say, "Oh, bosh! some more high falutin' system." Use a little horse sense, think a bit, you will see that you used to do exactly this very thing when you were running a little shop; only then you could attend to it yourself. Now it is so big that it has gotten away from you and you will have to substitute a little system for your old personal supervision to see that these things are handled the way you used to handle them. This does a lot, but it doesn't cost much.

By the method to be described we secured two important things. We pushed our production far beyond its former limit, and reduced our cost; and also got the good-will and co-operation of our employees. We made our shop an attractive place to work. Our employees could not be enticed away. Our labor turnover was declared by the Government, after an investigation, to be one of the very lowest in the United States. The very atmosphere of our shop changed.

The same policies, used in the much smaller shop of The Fireproof Furniture and Construction Company, gave the same excellent results. The employees here numbered 200. Costs were reduced; that missing 28 per cent, or most of it, was discovered and eliminated. We secured not only a larger but a better quality product. You may accept as shop axioms: a surly, disappointed workman will give you just as much as you can force out of him; a satisfied operator will give you about the best that is in him. The difference is astounding as any experienced man will tell you.

The Method Used

The card of Fig. 1 is made out for each employee that is working at production. (Note that this is the card to use where piece work or some wage system other than day work is used.)

1—The card, in addition to the name, check number, department and job, will show the *standard hourly rate of production* as determined by modern methods. This card assumes that the operator will work only upon this one job. Fig. 2 shows the card to be used where he works upon a multiplicity of jobs.

2—The operators' weekly production divided by the time worked will give the average actual output per hour. These quantities are taken directly from the worker's ticket and involves practically little extra work, for they are placed upon the tickets anyway and the figures therefrom are used in payroll and cost calculations.

3—The column "week ending" is, of course, filled out. Then follows the actual hourly production and the percentage representing the operator's standing is determined by dividing the actual production by the standard. This is done every week.

4—This standing may be modified by his record of scrap. Care has to be taken not to permit his attempt to improve his standing by hurrying and causing scrap. Upon the difficult jobs we made an allowance for scrap that seemed reasonable to expect, and, when this was exceeded, the report was made against the operator. The effect of this scrap report against the operator's record varied with the character of his work. In some cases each per cent of scrap over the allowable (per week) would reduce his standing 5 per cent. Thus we would figure his net standing.

5—If his percentage was from 90 per cent upward, the operator would be in Class A, one of our "topnotchers," and entitled to all of the benefits of Class A. These were, better wages, freedom from any danger of arbitrary discharge as long as he committed no breach of discipline, sure of a job, getting a better type of insurance, and certain of a promotion when the opening occurred.

Classes B and C have been described. Enough has been said to give the picture why the B Class strove to get into A Class. John Patterson used to say wisely, that human beings were influenced by two things: "The hope of reward and the fear of punishment." We old-timers know that nothing truer was ever said. In this little system we have both possibilities and the employees know it. The good man is out in the limelight and the poorer worker is spotted.

6—At the bottom of the card are lines where legitimate complaints may be registered. These are made by the foreman and the worker is notified so that he may have a chance to make an explanation if he so desires. A breach of discipline may not deserve discharge, but yet deserves rebuke. You would be surprised to see how anxious the men are to keep a clean record.

DISCHARGE SLIP
NATIONAL MANUFACTURING COMPANY

Date.....
Name.....Check No.....
Department.....Job.....
Why discharged.....
Give standard production rate.....
Give operators' average production rate.....
Give operators' class.....
How long employed.....
Signed.....
Foreman
Approved.....
Factory Manager
If not approved state why and return to Cost Department.

FIG. 3
The Discharge Slip

7—If a man is discharged the discharge slip (Fig. 3) is used. This will be commented upon later. The discharge, however, is not considered final and in force until it has passed through the department which controls these cards. This is usually the cost department. When a discharge slip comes in, the operator's production rate card is pulled out and his record noted. If he is a Class A worker the discharge is held up and sent to a superior officer for further examination. This is made in a manner that will not tend to diminish the department foreman's authority. But the foreman understands that if a Class A worker is discharged he must have a case which can be properly defended for the matter will come up automatically. He therefore, is very careful about having a clear case.

I used to find my foreman examining these cards time and time again before they took any extreme action. It's a healthy check. This is a very different proposition from the one where someone outside of the department—as an employment manager—can be appealed to and he has the power to re-instate the man either in the original or another department. Even the latter action is very mischievous. It lowers the foreman's authority in the eyes of the worker.

8—If a workman leaves, the foreman must, if possible, find out why; it is also the business of the employment manager to do everything possible to investigate why men are leaving. It is also another healthy check.

DAY WORK RATE INCREASE CARD
NATIONAL MANUFACTURING COMPANY

Name.....Check No.....Date.....
Department.....Class of Work.....

	Promised Rates	Actual Increase and Date	Foreman's Statement
Starting rates			
Due on.....			
Due on.....			

Sgd.....
Employment Dept.

FIG. 4
Day Work Rate Increase Card

This card is filled out by the foreman. It is then sent to the cost department or whatever department handles these production rate cards. The employee's card is pulled out and sent along with this discharge slip to the factory manager or whoever reviews these cases. Of course, the department handling the records could have appropriate forms to fill out but I believe it better to keep the forms and system down to a minimum.

If the operator is a Class A man the case is reviewed before the discharge is made effective, as has been related.

The Foreman's Authority

As a man who has had actual shop experience I have little patience with any methods that interfere with the foreman's authority over the workers. He must be the real commander of his group if he is to get out the work in satisfactory quantity and quality. There is nothing that will destroy your foreman's effectiveness so much as a system that will permit someone higher in authority to interfere continually with his power. The workmen soon scent out this condition and take advantage of it. As we say they "play horse with him." His power to push for output and discipline the refractory has almost disappeared.

The only reason for such plans is the fact that the management feel that they cannot trust their foreman to operate their departments and manage their workers properly. They, who think that, will find that this method will act as the desired curb where this may prove desirable and still will not "ham string" the foreman in running his group. The plans which limit his power may appear on the surface to work all right, the foreman will not object because he wants to hold his job, but I have never yet failed to find beneath this surface a serious lack of direct control and consequent inefficiency.

How It Works

With this plan you will find that the foremen soon learn that it is best for them to examine carefully a workman's production

card before he, in a fit of anger, arbitrarily discharges him. Finding the worker a top-notcher he will, unless the cause for discharge is proper, usually enter a complaint and possibly lay the man off. If, however, the cause deserves a discharge, then the company will back him up to the limit. In any case, the decision has been his. No one has over-ridden him.

Weeding Out the Inefficient

There is a great advantage in this plan which makes it possible to lay before the management each month a report of the operators who are below the standard in their outputs and are holding up production. They cannot escape detection. There are two ways to handle them. Either go after them rough shod and discharge them or adopt the method I always have used.

I favor investigating these cases for it often proves that their slackness may be due to conditions beyond their control and yet which the management may correct. We have made excellent workers out of apparently bad ones by simply changing their jobs. As an example: The output of a number of our women operators was not up to the standard. Investigation showed that in the morning they produced up to the standard but that their outputs lessened as the day wore on. As their jobs required them to stand while working we concluded that this low output was due to some physical condition that prevented them from keeping up the pace. Our nurse found this to be true. So we transferred these operators to "sit-down" jobs where they made good, some of them becoming very efficient.

The company thereby avoided the loss that comes from discharge and, most important of all, made friends of these operators. Such actions as this soon become "shop talk" and the effect upon the other workers was beneficial for they saw that the company was trying to handle the relations with them in a fair and human manner. Their interests were being looked after. Never forget that this "shop feeling" is important.

In other cases we found that giving the operator training on his or her job was very helpful. It was surprising to see how rapid the improvement was in many cases. Of course, there were numerous cases, especially at first, where we had to discharge the incompetents, but this was not done until we had tried to improve them. It saved money and made friends. In short our moves were in accordance with a *fixed policy* of doing everything we could to develop human relationship between the management and the working force. You will find that such a policy carried out properly, will bring large returns. It will help more than anything else in tracking down that 28 per cent loss.

Equalizing Day Rates

Often the workers under the day-rate plan of pay are overlooked when a concern attempts to improve the other conditions. These are the men in the tool room, stores, costs, maintenance, labor and similar departments. It is important that they be placed upon a basis that will improve their efficiency also.

There are often cases of glaring inequalities in the rates of pay. Then, too, promises made a worker of future raises are neglected. Many a man will not ask for his promised raise but how sore he gets when these promises are not fulfilled, especially when he perhaps sees a new man hired at a higher rate than he gets. You may be sure that you are paying far more than the saving you are making under such conditions. It's human nature to "get even" and they do with a vengeance. Working at day rate you cannot detect their loafing.

The Sensible Remedy

First determine what each job is worth. Determine the starting rate and the proper amounts and times of raises. When a man is employed this must be explained to him. Now don't let this matter slip by but plan to keep your promise. It is a part of your employment agreement with the man and should be kept as you keep any other agreement. Have the employment or cost department keep the card of Fig. 4.

These are to be filed in a follow up file that is checked over daily. When the date for a raise arrives the employee's card appears. The foreman must then be consulted to see if the man's work warrants the raise. If so then the foreman's approval is entered in column "Foreman's statement," and the raise goes through under your regular form, the superintendent approving.

This plan is a real relief to the superintendent who is usually pestered by a pile of raise slips sent to him by his different foremen. He has no idea of their relative merit and, if he acts at all, must spend too much of this time investigating. Some foremen will not recommend raises when they should; on the other hand, many will "pass the buck" to the superintendent and get rid of the worker by telling him that "it's up to the superintendent."

We must remember that every man-jack of us is mightily interested in our own increases of salary, but when it comes to the worker we are inclined to slight him. Yet we seem to think that he should work just as hard and as steadily whether or not we keep our promises. It simply doesn't work out that way.

If the foreman does not think that the man has shown enough ability to warrant a raise he should explain this to the worker frankly and so make his record on this card which must always be returned to the department handling them. Thus the worker understands the situation and may quit if he chooses.

Foreman's Rating

Don't forget your foremen. They must be handled in the same manner and all promises made them must be kept scrupulously. It will often be found well worth while to place them also upon a bonus method of pay. Nothing will spur them on like extra monetary rewards provided the production rate demanded is within reason. If you want quick results, offer the foremen extra rewards and see things move.

Promotion Through Merit or Pull

I have already dealt with the desirability of a promotion plan that provides that "the best man wins." You must remember too that this plan is important in order that your organization may be built up from your best man. Nothing is more deadly than to load up your higher positions in your organization with a lot of fellows whose present position of authority depended upon pull and relationship rather than merit.

I have based my promotions upon the rates of production. Some will say "productive capacity is not the best gage; a man, who is not the best producer, may have more executive ability." In the vast majority of cases the fellow that studies his job, that uses his head in studying out methods of increasing his speed, who is willing to put everything that's in him into his work is the best man for the job. I've heard the first argument many a time from some boss that is anxious that his uncle or brother get the place. It's usually "bunk" of the worst kind. Don't "fall for it."

The Promotion Method

First the factory manager or whoever is to handle the promotion must be promptly notified whenever a job-boss-ship or other position opens up.

Personally I have always thought it well to make quite a feature of our promotion method as the effect upon the shop was beneficial. I always insisted that the works manager or shop superintendent secure the production cards of every man on the job, and, with the foreman, get the workmen on this job together. The foreman would then read the records of the different members of the group aloud. This always made a deep impression upon the men. They were reminded that their records were on exhibition. I remember one of the poorer workmen muttering, "My——: if the old man knows what I'm doing down here I'd better pick up my feet and move faster."

The Prize Goes to the Best Man

When the best producer was selected and appointed there was never an objection. Every man got a square deal. Every one had the example of what they might secure if they only worked hard enough. We have had men come to us and ask for pointers on their jobs or some extra training so that they could improve their

Limit gauge construction *limits* replacement delays

Nash Dryer Exhaust Unit, Size F, handling condensation from paper machine dryers at Eastern Mfg. Co., So. Brewer, Me.

Nash Hytor Vacuum Pumps are built to limit gauges, on an interchangeable basis. The impeller of one pump will fit perfectly into any other pump of the same type and size. And so will the shaft, and every other part.

If a replacement becomes necessary, the new part can be obtained from our factory, and put into place without delay. No machining or alterations are required. Time is saved. Bothersome delays are avoided.

NASH ENGINEERING COMPANY
So. Norwalk Connecticut

New England Representative
Mr. G. H. Gleason, Nottingham Bldg., Copley Square, Boston, Mass.

Western Representative
Mr. T. H. Savery, Jr., 1524 Republic Bldg., Chicago, Illinois.

Nash Hytor
VACUUM PUMPS AND COMPRESSORS

ROLL PAPER—We are always interested in large lots of roll paper—any size or diameter.
Paper Manufacturers Co. Inc.
5th & Willow Sts., Phila., Pa.

TANKS
Blow Pits, Acid Storage Tanks, Vats, Etc.
Send us your specifications for prompt shipment
Kalamazoo Tank & Silo Co., Kalamazoo, Michigan

Mayer Coating Machines Company, Inc.
Laboratory Coating Machines and machines for the manufacture of Waxed papers, gummed paper, Asphalt coated and duplexed papers and other types.
P. O. Box 487 Rochester, N. Y.

"THE FOURDRINIER THAT TOOK THE IRE OUT OF WIRE"
INTERNATIONAL WIRE WORKS
MENASHA, WISCONSIN

Watson-Frye Company
BATH, MAINE
FOUNDERS — MACHINISTS
Pulp and Paper Mill Machinery
CYLINDER MOULDS
—Bronze and Lead Valves—

Ticonderoga Machine Works
Ticonderoga, N. Y., U. S. A.
MANUFACTURERS OF
WARREN IMPROVED CALENDAR DOCTORS
With Flexible Blades, Universal Adjustment and Control
(PATENTED)
WARREN IMPROVED DOUBLE PATENT DRUM WINDERS
Patent BALL VALVE Hydrant
Stock Circulating Systems and other Paper Mill Specialties
SEND FOR OUR BULLETIN

record. It was a matter of pride to them to keep that record clean and get out enough production to be a Class A man.

Every month the Class B and C records were gone over and steps taken to improve them. The foremen were held responsible for retaining too many Class B and C workmen in their departments. Uncle Bill and Cousin Mary had little chance to get away with poor work. They were exposed to public gaze and had to move along with the rest or vacate.

Your present time ticket shows all of the data required. You have upon it the time taken and the number of parts produced by the worker. You must use these data for payroll and cost purposes. Just take each man's time and his production and calculate his average hourly output. If he has worked upon more than one job then figure each job separately. Place this average output upon the card each week. You already have the stardard hourly output and therefore you establish his percentage of efficiency by dividing his actual hourly output by the standard.

Any workman whose percentage is 90 or over may be placed in Class A. Class B includes those whose ratings are between 70 per cent and 90 per cent. Class C are below these percentages. Mr. Hoover says "Among these (records) should be by all means, however, records of each employee, showing his attainments with respect to an established and fair standard known to both management and worker." He is certainly right.

Critical Questions

Ask these questions and answer them honestly.

Do I look upon the shop workers as separate individuals moved by the same emotions that influence me, or do I consider them simply as elements in production in about the same class as my machines?

Who controls the discharges

Have I any plan to prevent discrimination?

Who determines the wage rates and how is it done?

Have we any accurate data showing what production should be reached upon each job or is it all guess work?

Do my foremen reduce the wage rates when a workman exceeds certain outputs and earnings?

Do we pay any attention to keeping our promises in regard to raises of pay?

Who handles promotion? Have we any control of these or any positive assurance that the best man will win the promotion? Can a superior put a friend or an efficient relative in a higher position without our knowing it?

When I pass through the shop unexpectedly and observe carefully, that is the impression I get in the different departments concerning both the workers and the foremen? Do they seem to show any interest in their work? Is "the spirit" there?

Are these things that Carpenter is writing about all guff or are they worth while.

If they are worthwhile what am I going to do about it?

Any intelligent manufacturer will say today that his organization is vital to his success, overtopping in importance his machinery, tools, buildings and all other factors of production. Yet he will allow this all-important factor to grow up like "Topsy." The hit or miss plan, and largely "miss," at that seems satisfactory. He will take chances upon developing the men to fill responsible positions that he wouldn't take with a machine. He is so afraid of too much "red tapism" that he neglects the horse sense requirements of proper development. A concern so constructed and operated will not live in these days because the elements of a sound and efficient growth are not there. It may prosper because of the force and skill of the principal manager but, when he goes, it will not support itself for long.

Just consider the value of a group of Class A workers, selected by a method which unfailingly picks out the efficient, backed up by Class B who are striving to improve so as to get into Class A; a body of loyal men and women satisfied with their wages, earnings, surroundings and treatment.

Purchase Specifications for Wall Board

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 21, 1926.—At the request of the Federal Specifications Board the paper laboratory of the Bureau of Standards, through a special research, is assisting in the development of a purchase specification for fiber wall board, says the laboratory in discussing this subject. The statement says further:

Ten manufacturers are cooperating in this work by supplying authentic samples of their products and acting in an advisory capacity. Fiber wall board is composed of vegetable fibers made water resistant by the incorporation of rosin or other sizing materials, and, in addition, the surfaces are sometimes treated with water-resistant varnishes or oils. There are two types available—the laminated board, consisting of several plies bound together by a suitable adhesive, such as sodium silicate, and the homogeneous board which is a one-piece product. In respect to dimensions, the manufacturing practice regarding length and width is quite uniform, most of the manufacturers supplying boards 32 and 48 inches wide and 6 to 16 feet in length in even feet. The laminated board is usually supplied in two thicknesses—three-sixteenths and one-fourth inch. The thickness of the homogeneous type is more variable and generally greater than that of the laminated type, running up to seven-sixteenths inch. The weight ranges from 350 to 675 pounds for the laminated type and 600 to 1,100 pounds for the homogeneous type per 1,000 square feet.

While the bursting strength is quite commonly taken as a measure of the resistance of the board to strains incident to usage, the research made in this direction indicates that a better measure, more in line with service conditions, is obtained by a flexural strength test. The method consists of suspending a strip of the board on two parallel rods and applying an increasing load at the center of the strip through a rod placed across the top parallel to the other rods until the board breaks. The load required to break various boards, using a 3-inch strip, varied from 7 to 18 pounds per three-sixteenths-inch thickness for the weaker direction of the boards.

An important consideration is the possibility of the board warping after erection, as the result of expansion caused by absorption of moisture from the surrounding atmosphere. This can be determined by immersing the board in water for a short period. Experiments are in progress to find if this method of test gives adequate information as to the liability of the board to warp. The results so far obtained indicate that it does not. A simple extensometer was so designed that several specimens at a time could be tested for degree of expansion by measuring the expansion upon subjecting them to a moisture-saturated atmosphere. The actual expansion of various boards so far tested does not correspond with the amount of water they absorb when subjected to the immersion test. Additional data are being obtained on this point, and it is believed that when they are available an adequate specification can be recommended.

Itasca Paper Co. Installs New Drying System

[FROM OUR REGULAR CORRESPONDENT]

GRAND RAPIDS, Minn., September 20, 1926.—Special workmen are at work at the Itasca Paper Company mill, installing a new ventilating system for both the paper machines. The new system is being furnished and installed by The Drying Systems, Inc., Company, of Chicago, and their men are here at work.

The new ventilating system will cover the entire machines for their whole length, leaving them open only on the side where the workmen are employed. This is expected to reduce the amount of steam necessary to turn into the hot rollers for the drying of the paper, and make it possible to increase production at the mill.

Let Tide Water
co-operate with you

THE Tide Water Engineering Bureau is at your service in solving all lubrication problems. This expert service is entirely *without cost or obligation.* Send a card today and one of our Staff Engineers will be glad to call at your mill to make a lubrication survey under your direction.

The Tide Water Power Group
—for paper mill lubrication

TYCOL GEAR COMPOUND
A soft, semi-fibrous grease for enclosed gears under heavy pressure.

TYCOL MEDIUM YARN GREASE
For beater bearings where high temperatures, heavy pressures and water are present.

TYCOL YARN GREASE
For dryer and other bearings operating at high temperatures.

TYCOL LUBRICANT NO. 1
A medium hard grease for Jordans, grease lubricated calender rolls and for general use.

TYCOL GREASE
A hard grease for replenishing Tycol Yarn Grease.

TYCOL GEAR COATING SOFT
A viscous lubricant especially recommended for use on slow-moving open gears.

TIDE WATER OIL SALES CORPORATION
11 BROADWAY NEW YORK

Dietz Toilet Paper Machines
For making Toilet and Paper Towel Rolls
(With or without perforations)

Self Adjusting — Easy to Operate

Also

AUTOMATIC TUBE MACHINES

Producing 3,600 wire-stitched toilet tubes per hr
Manufacturers of Sanitary Crepe Towel Machines, Slitting and Rewinding Machines, Drop Roll slitting Machines, Photo Mount Beveling Machines, Rotary Card Cutting Machines, etc.
Correspondence solicited

DIETZ MACHINE WORKS
126-128 W. Pontaine Street
Cor. Waterloo St. (between Front & Second St.)
and below Diamond St.
Phila., Penna., U. S. A.

WATER IS CHEAPER THAN COAL

You can cut your operating costs tremendously by using water power in your mill and thus saving coal.
There is no more efficient machine for this purpose than a C.M.C. Hydraulic Turbine. Year in and year out, it delivers a steady supply of power at low cost.
Ask us for our free catalog No. 306 which tells in detail how you can apply water power to your mill.
Agents Wanted in Open Territory—Write for Details

Christiana Machine Company

Specialists in the manufacture of Hydraulic Turbines, Cast Tooth Gears, Mortise Gears and Cut Gears
Christiana, Pa., U. S. A.
Established 1830

The
ST. REGIS PAPER COMPANY

Daily Capacity 425 TONS

Newsprint, Catalog
Directory Papers
Butchers Manila
Packers Oiled Manila

General Sales Office
49 Wall St., New York

Farmers' Bank Bldg.
Pittsburgh, Pa.

BLUE RIDGE FIBER
Bleached Soda Pulp

Manufactured and sold by
COLUMBIAN PAPER COMPANY
BUENA VISTA VIRGINIA

Samples and Prices upon application

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 25, 1926

SUMMARY

Cigarette paper .....14 cs.
Wall paper .....11 bls., 22 cs.
Paper hangings .....19 bls., 29 cs.
News print .....44 cs.
Printing paper .....32 bls., 279 cs.
Wrapping paper .....23 rolls, 9 crates, 8 cs.
Packing paper .....61 bls., 32 cs.
Kraft paper .....211 rolls
Stencil paper .....26 cs.
Colored paper .....6 cs.
Transfer paper .....13 cs.
Decalcomania paper .....23 cs.
Tissue paper .....48 cs.
Aluminum paper .....17 cs.
Surface coated paper .....98 cs.
Gold coated paper .....1 cs.
Photo paper .....7 cs.
Writing paper .....25 cs.
Filter paper .....15 cs.
Drawing paper .....7 cs.
Cover paper .....1 cs.
Fancy paper .....5 cs.
Straw board .....112 rolls
Paper tubes .....12 cs.
Miscellaneous paper...2768 rolls, 264 bls., 266 cs.

CIGARETTE PAPER

Standard Products Corp., La Savoie, Havre, 14 cs.

WALL PAPER

F. J. Emmerich, Deutschland, Hamburg, 1 cs., 1 ble.
C. Grimmer & Son, Deutschland, Hamburg, 1 cs., 4 bls.
F. J. Emmerich, Lancastria, Southampton, 3 bls.
F. J. Emmerich, Franconia, Liverpool, 3 cs.
J. E. Bernard & Co., Zeeland, Antwerp, 2 cs.
A. C. Dodman, Jr., Inc., Homeric, Southampton, 3 bls.
F. Henjes, Jr., Mauretania, Southampton, 6 cs.
Keller-Dorian Paper Co., Mauretania, Southampton, 9 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnetonka, London, 19 bls., 10 cs.
Downing's, Inc., La Savoie, Havre, 5 cs.
Whiting & Patterson Co., Mauretania, Southampton, 14 cs.

NEWS PRINT

Parsons & Whittemore, Inc., Deutschland, Hamburg, 44 cs.

PRINTING PAPER

P. E. Vernon Co., Casper, Kotka, 19 cs.
Maurice O'Meara Co., Casper, Kotka, 80 cs.
Perkins, Goodwin & Co., Veendam, Rotterdam, 32 rolls.
B. F. Drakenfeld & Co., Franconia, Liverpool, 37 cs.
P. C. Zuhlke, Zeeland, Antwerp, 63 cs.
Oxford University Press, Celtic, Liverpool, 23 cs.
Maurice O'Meara Co., Muenchen, Bremen, 57 cs.

WRAPPING PAPER

Van Oppen & Co., American Trader, London, 9 crates.
F. C. Strype, Zeeland, Antwerp, 3 rolls, 8 cs.
Dennison Manfg. Co., Caledonia, Glasgow, 20 rolls.

PACKING PAPER

J. P. Heffernan Paper Co., Veendam, Rotterdam, 61 bls.
Commonwealth Bank, Deutschland, Hamburg, 10 cs.
Quality Art Novelty Co., Deutschland, Hamburg, 22 cs.

KRAFT PAPER

Arkell Safety Bag Co., Drottningholm, Gothenburg, 211 rolls.

STENCIL PAPER

Arlac Dry Stencil Co., Deutschland, Hamburg, 26 cs.

COLORED PAPER

P. H. Petry & Co., Deutschland, Hamburg, 1 cs.
Hensel, Bruckman & Lorbacher, Deutschland, Hamburg, 5 cs.

(Continued on page 64)

COVER PAPER

International Forwarding Co., Deutschland, Hamburg, 1 cs.

TRANSFER PAPER

Atlantic Forwarding Co., Deutschland, Hamburg, 13 cs.

DECALCOMANIA PAPER

C. W. Sellers, Deutschland, Hamburg, 7 cs.
L. A. Consmiller, Muenchen, Bremen, 16 cs.

TISSUE PAPER

Schenckers, Inc., Deutschland, Hamburg, 48 cs.

ALUMINUM PAPER

H. D. Catty & Co., Zeeland, Antwerp, 17 cs.

SURFACE COATED PAPER

Montag Bros., Deutschland, Hamburg, 6 cs.
P. C. Zuhlke, Zeeland, Antwerp, 61 cs.
Gevaert Co. of America, Zeeland, Antwerp, 31 cs.

GOLD COATED PAPER

C. B. Richard & Co., Muenchen, Bremen, 1 cs.

PHOTO PAPER

T. F. Wilmot & Co., Homeric, Southampton, 7 cs.

WRITING PAPER

Stern Bros., Muenchen, Bremen, 20 cs.
Japan Paper Co., France, Havre, 5 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Minnetonka, London, 15 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Minnetonka, London, 3 cs.
Keuffel & Esser, Lancastria, Southampton, 4 cs.

FANCY PAPER

Hensel, Bruckman & Lorbacher, La Savoie, Havre, 3 cs.
Hensel, Bruckman & Lorbacher, France, Havre, 2 cs.

STRAW BOARD

A. Vuyk, Veendam, Rotterdam, 112 rolls.

PAPER TUBES

H. de Maguinn, France, Havre, 12 cs.

MISCELLANEOUS PAPER

Japan Paper Co., La Savoie, Havre, 2 cs.
Coenen, Morrison & Co., La Savoie, Havre, 1 cs.
British American Tobacco Co., La Savoie, Havre, 30 cs.
A. C. Dodman, Jr., Inc., La Savoie, Havre, 1 cs.
Perry, Ryer & Co., Caledonia, Glasgow, 139 cs.
E. H. Bailey & Co., Caledonia, Glasgow, 23 cs.
R. Wilson Paper Corp., Caledonia, Glasgow, 24 cs.
Foreign Paper Mills, Inc., Drottningholm, Gothenburg, 531 rolls.
D. S. Walton & Co., Drottningholm, Gothenburg, 53 rolls.
C. G. Winans Co., Inc., Drottningholm, Gothenburg, 689 rolls, 21 bls
C. J. O'Shea, Drottningholm, Gothenburg, 51 bls.
Arkell Safety Bag Co., Drottningholm, Gothenburg, 186 rolls.
L. Bamberger & Co., Drottningholm, Gothenburg, 44 bls., 266 rolls.
The Borregaard Co., Inc., Drottningholm, Gothenburg, 148 bls., 1523 rolls.
J. E. Anderson, Drottningholm, Gothenburg, 3 cs.
Kadri Bros., France, Havre, 9 cs.
Guibout freres, France, Havre, 4 cs.
Standard Products Corp., France, Havre, 18 cs.
T. F. Wilmot & Co., Homeric, Southampton, 7 cs.
Hensel, Bruckman & Lorbacher, Homeric, Southampton, 5 cs.

RAGS, BAGGINGS, ETC.

E. J. Keller Co., Inc., C. de Alene, Algiers, 54 bls. bagging.
Chase National Bank, Fairfield City, Alexandria, 165 bls. rags.
Philadelphia Girard National Bank, Fairfield City, Alexandria, 72 bls. rags.
A. H. Searle, Inc., Lancastria, Southampton, 187 bls. rags.
Royal Manfg. Co., Zeeland, Antwerp, 60 bls. cotton waste.
Royal Manfg. Co., Conehatta, Manchester, 22 bls. cotton waste.
A. C. Fetterolf & Co., Celtic, Liverpool, 64 bls. rags.
Brown Bros. & Co., Nobles, Alexandria, 250 bls. rags.
The Stone Bros. Co., Inc., Sacandaga, Antwerp, 37 bls. rags.
Royal Manfg. Co., Sacandaga, Antwerp, 92 bls. rags.
Anglo South American Trust Co., Bolivier, Antwerp, 678 bls. flax waste.
E. J. Keller Co., Inc., Bolivier, Antwerp, 81 bls. bagging.
Brown Bros. & Co., Columbia, Venice, 28 bls. rags.
Chase National Bank, Giulia, Trieste, 97 bls. rags.
Bulkley, Dunton & Co., Veendam, Rotterdam, 225 bls. bagging.
Urania Trading Co., Veendam, Rotterdam, 82 bls. jute rags.
S. Silberman & Co., Muenchen, Bremen, 43 bls. rags.
Equitable Trust Co., Muenchen, Bremen, 85 bls. rags.
A. W. Fenton, Inc., Muenchen, Bremen, 125 bls. rags.
B. D. Kaplan, Muenchen, Bremen, 55 bls. rags.
American Union Bank, Muenchen, Bremen, 20 bls. rags.
Central National Bank, Muenchen, Bremen, 88 bls. rags.
Salomon Bros. & Co., Deutschland, Hamburg, 31 bls. rags.
American Exchange National Bank, Deutschland, Hamburg, 33 bls. new cuttings.
Robert Blank, Isarco, Naples, 61 bls. rags.
Robert Blank, Columbia, Venice, 28 bls. rags.
E. J. Keller Co., Inc., D. Dollar, Kobe, 200 bls. bagging.

OLD ROPE

Brown Bros. & Co., Idaho, Hull, 180 coils.
Brown Bros. & Co., Exeter City, Bristol, 135 coils.
Brown Bros. & Co., Veendam, Rotterdam, 65 coils.
W. Steck & Co., Veendam, Rotterdam, 69 coils.

MANILA ROPE

Grady, Travers & Co., Veendam, Rotterdam, 125 coils.
New York Cordage Co., Zeeland, Antwerp, 40 coils.

MANILA ROPE YARN

Manufacturers Trust Co., Pr. Van Buren, Manila, 227 rolls.

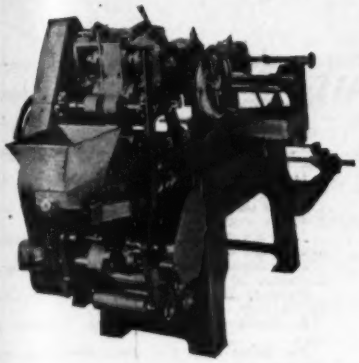
SUNN ROPE

De Grauw, Aymar & Co., Zeeland, Antwerp, 20 coils.

WOOD PULP

Johanson, Wales & Sparre, Inc., Casper, Hernosand, 750 bls. sulphite, 125 tons.
Johanson, Wales & Sparre, Inc., Casper, Hernosand, 1500 bls. sulphate, 250 tons.
Bulkley, Dunton & Co., Drammensfjord, Iggesund, 1750 bls. sulphite, 350 tons.
Bulkley, Dunton & Co., Drammensfjord, Sundsvall, 625 bls. sulphite, 125 tons.
M. Gottesman & Co., Inc., Drammensfjord, Sundsvall, 1225 bls. sulphite, 245 tons.
Scandinavian Pulp Agency, Inc., Drammensfjord, Sundsvall, 975 bls. sulphite, 195 tons.
Scandinavian Pulp Agency, Inc., Drammensfjord, Sundsvall, 2750 bls. sulphate, 550 tons.
Scandinavian Pulp Agency, Inc., Drammensfjord, Skutskar, 4870 bls. wood pulp, 842 tons.
Pagel, Horton & Co., Inc., Drammensfjord, Gefle, 750 bls. sulphite, 152 tons.
Bulkley, Dunton & Co., Drammensfjord, Gefle, 2625 bls. sulphite, 533 tons.
E. M. Sergeant & Co., Drottningholm, Gothenburg, 510 bls. sulphite.
E. M. Sergeant & Co., Drottningholm, Gothenburg, 748 bls. dry soda pulp.
Johanson, Wales & Sparre, Inc., Drottningholm, Gothenburg, 891 bls. dry soda pulp.
Price & Pierce, Ltd., Drottningholm, Gothenburg, 250 bls. wood pulp.
M. Gottesman & Co., Inc., Columbia, Sebenico, 5200 bls. wood pulp.
Buck, Kiaer & Co., Inc., Bergensfjord, Jarpen, 2405 bls. chemical pulp.
E. M. Sergeant & Co., Bergensfjord, Oslo, 325 bls. sulphite.
E. M. Sergeant & Co., Bergensfjord, Oslo, 150 bls. chemical pulp.
D. M. Hicks, Inc., Giulia, Trieste, 854 bls. wood pulp.

(Continued on page 64)



HIGHEST SPEED
Paper Bag Machinery

Get My Quotations Before Placing Your Orders
Special Machinery Designed and Built

A. L. PARRISH,
1702 Robinson St., South Bend, Ind.

STEARNS

W O O D 1849 **W O O D**

TANKS

The A. T. Stearns Lumber Co.
Established 1849
125 Taylor Street, Neponset, Boston, Mass.

82 YEARS EXPERIENCE
In Making

Felts for Paper Manufacturers certainly recommends our ability to satisfactorily serve your requirements.

OUR **TRIUNE** AND
MULTIPLE PLY
DRYER FELTS

English Weave—Fine Face Felt in Three, Four, Five and Six Ply—60" to 214" in width—insure large production. Absolutely no felt marks in paper.

FITCHBURG DUCK MILLS
Established 1844
FITCHBURG, MASS.

THE GEORGE M. GRAVES CO., Inc.
Domestic and Foreign

WASTE PAPER	NEW CUTTINGS	HEMP ROPE
OLD RAGS	MANILA ROPE	FLAX WASTE
WOOD PULP	BAGGING	COTTON WASTE

77 SUMMER STREET BOSTON, MASS

PAPER MILL LABORATORIES, INC.
830 S. Front St. Quincy, Ill.
Sidney D. Wells, Director of Laboratory
Investigations, Examinations, Consultations, Reports.
Chemical Engineering Paper Technology
Specialists in Fiber Making Processes

Salomon Bros. & Co.
IMPORTERS OF
All Grades of Rag and Paper Stock
200 FIFTH AVENUE, NEW YORK
COTTON WASTE :: LINTERS :: RAMIE

Ruths Accumulator Company, Inc.
292 Madison Av., New York City

Imports of Paper and Paper Stock

(*Continued from page 62*)

M. Gottesman & Co., Inc., Giulia, Trieste, 4270 bls. wood pulp.

WOOD PULP BOARDS

Lagerloef Trading Co., Casper, Kotka, 111 bls., 18 tons.
Wilkinson Bros. & Co., Inc., Drottningholm, Gothenburg, 32 rolls.

WOOD PULP WADDING

Bendix Paper Co., Veendam, Rotterdam, 60 bls.

WOOD FLOUR

A. Kramer & Co., Inc., Veendam, Rotterdam, 502 bags.
Innes, Spiedne & Co., Drottningholm, Gothenburg, 678 bags.
B. L. Soberski, Bergensfjord, Frederickstad, 3750 bags.

CASEIN

T. M. Duche & Sons, Bonheur, Buenos Aires, 417 bags.
Crawford, Hammond & Co., Bonheur, Buenos Aires, 375 bags.
Kalbfleisch Corp., Bonheur, Buenos Aires, 334 bags.
National City Bank, Bonheur, Buenos Aires, 417 bags.
M. E. Clarendon & Co., Corsican Prince, Buenos Aires, 417 bags, 25,020 kilos.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 25, 1926

T. M. Duche & Sons, Bonheur, Buenos Aires, 1251 bags casein.
First National Bank of Boston, Bonheur, Buenos Aires, 757 bags casein.
Pagel, Horton & Co., Inc., Hjelmaren, Gefle, 2500 bls. sulphate pulp.
Bulkley, Dunton & Co., Hjelmaren, Iggesund, 1000 bls. sulphate pulp.
Bulkley, Dunton & Co., Hjelmaren, Iggesund, 500 bls. sulphite pulp.
Pagel, Horton & Co., Inc., Casper, Domsjo, 5160 bls. sulphite, 860 tons.
Johanson, Wales & Sparre, Inc., Casper, Hernosand, 300 bls. sulphite, 50 tons.
Johanson, Wales & Sparre, Inc., Casper, Hernosand, 2400 bls. sulphate, 400 tons.
Kalbfleisch Corp., Corsican Prince, Buenos Aires, 1251 bags casein, 65,477 lbs.
First National Bank of Boston, Corsican Prince, Buenos Aires, 1668 bags casein, 100,080 kilos.
Robert Blank, Ala, Antwerp, 356 bls. rags.
E. J. Keller Co., Inc., Ala, Antwerp, 457 bls. rags.
E. J. Keller Co., Inc., Ala, Antwerp, 124 bls. bagging.

NORFOLK IMPORTS

WEEK ENDING SEPTEMBER 25, 1926

E. J. Keller Co., Inc., Westerner, Antwerp, 60 bls. rags.
Castle & Overton, Inc., Western Ally, Rotterdam, 538 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING SEPTEMBER 25, 1926

E. J. Keller Co., Inc., Burgerdyk, Rotterdam, 109 bls. rags.
Castle & Overton, Inc., West Errol, France, 377 bls. rags.

PORTLAND, ME., IMPORTS

WEEK ENDING SEPTEMBER 25, 1926

M. Gottesman & Co., Inc., Hjelmaren, Iggesund, 2500 bls. sulphate pulp.
Pagel, Horton & Co., Inc., Casper, Domsjo, 6300 bls. sulphate, 1050 tons.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 25, 1926

W. Schall & Co., Exeter City, Bristol, 467 bls. rags.
Chase National Bank, C. de Alene, Algiers, 390 bls. rags.
Chase National Bank, C. de Alene, Algiers, 138 bls. old rope.
Philadelphia Girard National Bank, C. de Alene, Algiers, 159 bls. rags.
E. J. Keller Co., Inc., Sacandaga, Antwerp, 211 bls. rags.
D. I. Murphy, Sacandaga, Antwerp, 301 bls. rags.
Castle & Overton, Inc., Sacandaga, Antwerp, 1185 bls. rags.
J. Walworth & Son, Sacandaga, Antwerp, 28 bls. thread waste.
Philadelphia Girard National Bank, Sacandaga, Antwerp, 10 cs. surface coated paper.
Bulkley, Dunton & Co., Sacandaga, Antwerp, 48 bls. rags.
A. Hurst & Co., Sacandaga, Antwerp, 42 bls. rags.
The Stone Bros. Co., Inc., Sacandaga, Antwerp, 256 bls. rags.
Castle & Overton, Inc., London Commerce, London, 61 coils old rope.
Castle & Overton, Inc., Saugus, Spain, 86 bls. rags.
E. J. Keller Co., Inc., Blydendyk, Rotterdam, 75 bls. rags.
E. J. Keller Co., Inc., Blydendyk, Rotterdam, 72 coils old rope.
E. J. Keller Co., Inc., Oklahoma, Havre, 579 bls. rags.
E. J. Keller Co., Inc., Wilfred, Hamburg, 169 bls. rags.
Robert Blank, Ulm, Hamburg, 300 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 25, 1926

Pagel, Horton & Co., Inc., Drammensfjord, Gefle, 6375 bls. sulphate, 1295 tons.
Pagel, Horton & Co., Inc., Drammensfjord, Gefle, 1375 bls. sulphite, 201 tons.
Bulkley, Dunton & Co., Drammensfjord, Gefle, 2000 bls. sulphite, 415 tons.
Brown Bros. & Co., Drammensfjord, Gefle, 1250 bls. sulphite, 254 tons.
Scandinavian Pulp Agency, Inc., Drammensfjord, Skutskar, 2000 bls. wood pulp, 254 tons.
Castle & Overton, Inc., Western Ally, Rotterdam, 400 bls. wood pulp.
Castle & Overton, Inc., Ala, Antwerp, 61 bls. rags.

Link Belt Co. Opens Office in Utica

UTICA, N. Y., September 28, 1926.—A new branch office has just been opened in Utica, at 107 Foster Building, 131 Genesee street, by Link-Belt Company of Chicago, Philadelphia and Indianapolis.

This, their thirty-fourth office, and the third within the State of New York, is to be devoted especially to the sale of Link-Belt Silent Chain and Link-Belt Roller Chain; and will be in charge of F. P. Hermann, Jr., who has had many years of Silent Chain experience and contact while located in the New York office of that company.

To Represent Griley-Unkle in the East

The Griley-Unkle Engineering Company of Fort Wayne, Ind., has juset announced that it has appointed Muirhead & Mansfield of 501 Fifth avenue, New York, as eastern representatives. Both authority on paper board grades.

Mr. Muirhead has been connected with the paper industry for twenty-five years in the capacity of superintendent and as proment required in the operating of plants.

Mr. Muirhead and Mr. Mansfield are men of experience in the manufacture of paper and board as well as the mechanical equipduction manager of a group of mills, and is recognized as an

Mr. Mansfield was assistant engineer in the Paper Division of the Forest Products Laboratory of Canada and laterly Chemical Engineer for the Robert Gair Company.

Messrs. Muirhead and Mansfield about two years ago formed a partnership as consulting engineers and production managers for paper mills and in this work have been identified with some of the leading mills in the industry. Associated with them is P. S. Bolton, a graduate of the Paper Making School of the University of Maine, more recently connected with fine paper manufacturer, the Huron Milling Company and the Arca Regulators, Inc.

Longview Fibre Stockholders Entertained

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 21, 1926.—Roy F. Morse, general manager of the Longview division of the Long-Bell Lumber Company, Longview, Wash., entertained at lunch September 16 some of the principal out-of-town stockholders of the recently organized Longview Fibre Company, which is to build a new $2,500,000 paper plant. Later they visited the properties of the company in the industrial section of the city which were acquired for the mill site. The party included C. C. Yawkey, J. A. Alexander, A. P. Woodson and Ben Alexander, of Wausau, Wis., and Myron C. Woodard, of Silverton, Ore.

Exports of German Paper To U. a. Decrease

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 28, 1926.—Exports of paper and paper products from the Wurttemburg and Baden consular districts of Germany to the United States during the first six months of this year amounted to less than half the volume of similar shipments in the corresponding period of last year, according to exports received by the Paper Division of the Department of Commerce. The value of these shipments at the same time showed a decrease of 40 per cent.

Industrial Bond Issues

WE are prepared to purchase entire bond issues of sizeable and sound American industrial and manufacturing companies.

Address our office
at
42 Broadway, New York City

HORNBLOWER & WEEKS

ESTABLISHED 1888

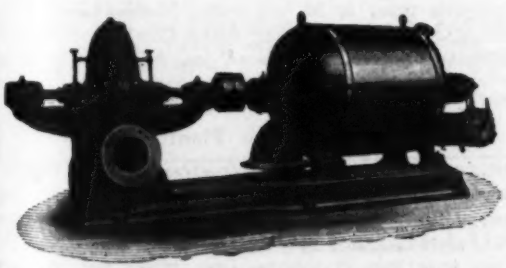
BOSTON NEW YORK CHICAGO CLEVELAND
DETROIT PROVIDENCE PORTLAND, ME. PITTSBURGH

Horizontally Split Casing Double Suction Pumps

LAWRENCE PUMPS

The name protects and guarantees you satisfaction.

We are the original designers and builders of the LAWRENCE PUMP.



Lawrence pumps for all conditions and services. Forty-four years of practical experience with centrifugal pump development places us among the leaders. Our efforts have been rewarded by the acceptance of our product in general.

Thousands of installations and the successful performance of our pumps should be sufficient proof of our ability to handle your pumping problems. Our engineering force is at your command.

Have only Lawrence Pumps, manufactured by the

Lawrence Machine Company

361 Market St. Lawrence, Mass.

MORSE SILENT CHAIN DRIVES

Two 125 H.P. Morse Silent Chain Drives from motors to beaters. Drivers, 700 r.p.m.; Driven, 360 r.p.m.

One-tenth or 5,000 H.P., dependable results!

Small drives or large, ordinary service or particularly severe with the presence of moisture, dust and fumes, Morse Silent Chain Drives give the same dependable service. Day in and day out, they maintain 98.6% efficiency for many years. Positive, flexible, durable.
Over 6,000,000 H. P. have been installed. Many installations 15 and 20 years old are still giving satisfactory service. 6,000 to 250 r.p.m. and slower, especially suitable on short centers.

Morse Chain Co., Ithaca, N. Y., U. S. A.

Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Charlotte, N. C.
Chicago, Ill.
Cleveland, Ohio
Denver, Colo.
Detroit, Mich.
Louisville, Ky.
Minneapolis, Minn.
New Orleans, La.
New York, N. Y.
Omaha, Neb.
Philadelphia, Pa.
Pittsburgh, Pa.
San Francisco, Calif.
St. Louis, Mo.
Toronto, Ont., Canada
Winnipeg, Man., Canada

New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, September 29, 1926.

Trading in the local paper market is becoming more active and the various grades are in persistent demand. The volume of inquiries being received is expanding and the general outlook is quite promising. Prices are holding up very well and there seems little likelihood of concessions for some considerable time. Sales forces of the leading paper houses are beginning their fall campaign with every prospect of a successful wind up for the year.

Demand for news print continues to grow and there is keen competition for spot supplies, which are somewhat limited. Publishers report that advertising and circulation figures are still rising. New York city newspapers carried about 10 per cent more advertising in the first eight months of 1926 than in the first eight months of 1925 and 13 per cent more than in same period of 1924. There was 8 per cent more pages of advertising and reading matter in these papers in the first eight months of 1926 than in these months of 1925. Advertising in national monthly and weekly periodicals for nine months of 1926 amounted to 19,564,000 agate lines, compared with 17,944,000 lines in the first nine months of 1925, a gain of 9 per cent, and 22,098,000 lines in the first nine months of 1920, a loss of 11 per cent.

The paper board market is exhibiting a strong undertone and prices are firmer than for some period of time. Production is heavy, and is being readily absorbed. Fine papers are in excellent request while the demand for tissues is also increasing. The coarse paper market is enjoying greater activity and wrapping paper is moving at a satisfactory pace.

Mechanical Pulp

Consumption of ground wood is keeping pace with production and prices are holding up to schedule. Contract shipments continue to move in good volume and the spot market is more lively than in recent weeks. Domestic mechanical pulp is still being offered at from $28 to $32 a ton, f. o. b., mill, while imported moist ground wood is selling at from $36 to $38 a ton, ex dock, and dry ground wood at from $39 to $40 a ton.

Chemical Pulp

A much steadier tone is developing in the chemical pulp market and prices are very firm. Reports of shading are infrequent. Some activity has developed in the spot market. Contract withdrawals are moving into consumption at a satisfactory rate. In some quarters the view is expressed that the market will be influenced in the near future by the situation in Norway and England should the labor troubles in these countries continue much longer.

Old Rope and Bagging

Domestic old rope is in good demand and supplies are being taken up in excellent style. Some improvement has also been noticed in the demand for imported old rope. A moderate volume of business was transacted in the bagging market during the past week. Roofing bagging is in fair request and stocks in hand are about sufficient to take care of immediate needs.

Rags

Cotton cuttings are arousing more interest from the paper mills. Some improvement has also been noticed in the mixed rag situation. While the higher grades of imported rags are rather quiet, a more active market is expected in the near future, as it is felt that many of the mills will shortly be in a position to replenish their supplies. No radical changes in quotations have been recorded of late.

Waste Paper

Although collections are gradually improving, supplies are still scarce and quotations on the lower grades of waste paper remain quite steady. Mixed paper is in excellent request and dealers are very firm in their ideas of prices. Most of the board mills are evincing more interest in the market, and the prospect is that there will shortly be keener competition for supplies.

Twine

The twine market continues to show signs of improvement and, now that the demand for wrapping paper is expanding, it is believed that the industry will soon be in a better position. Twine quotations remain steady but lower than normal, and advances are predicted as soon as business expands to any great extent.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 28, 1926.—The Government Printing Office will receive bids on October 1 for 45,000 pounds (63,300 sheets) of various sizes .040 thickness chip board.

The Government Printing Office has received the following bids for 40,350 pounds of 38 x 48—269, single coated book paper. Allied Paper Mills, at 8.09 cents per pound; Kalamazoo Paper Company, 7.75 cents; Dobler & Mudge, 8.4 cents; Reese & Reese, 7.895 cents and 8.395 cents; Old Dominion Paper Company, 12.99 cents; Barton, Duer & Koch Paper Company, 8.26 cents; Mathers-Lamm Paper Company, 8.9 cents and 9.4 cents; R. P. Andrews Paper Company, 8.38 cents; Whitaker Paper Company, 8.13 cents; and Maurice O'Meara Company, 9.75 cents.

The following bids were also received for 10,000 pounds of kraft wrapping paper in 36 inch rolls: Mathers-Lamm Paper Company, at 5.9 cents; Whitaker Paper Company, 5.23 cents; Reese & Reese, 5.45 cents; S. Walter, Inc., 5.75 cents less 2 per cent.

Tayford Hydro-Electric Plant Acquired

Negotiations which have been in progress for some time for the taking over of the hydro-electric plant of the Tayford Company, Inc., at East Lee, Mass., by those interested in the Mountain Mill Paper Company, have been virtually completed. The negotiations have been in progress since March last, at which time the Tayford Company became unable to supply power to the Mountain Mill on the contract then in force.

The pipe line is being repaired and over-hauled and it is expected that the power house will soon be put in operation to supply the Mountain Mill Paper Company with power. The acquisition of this property by those interested will afford the Mountain Mill Paper Company an excellent source of power at very reasonable rates.

The Tayford plant cost when it was constructed, it is said, between $150,000 and $200,000, and the reported price given in connection with its transfer to those interested in the Mountain Mill Paper Company is around $30,000.

HARDY S. FERGUSON
CONSULTING ENGINEER

200 Fifth Avenue **New York City**

MEMBER AM. SOC. C. E.
MEMBER AM. SOC. M. E.
MEMBER ENG. INST. CAN.

PAPER, PULP AND FIBRE MILLS INCLUDING BUILDINGS AND COMPLETE MECHANICAL EQUIPMENT
WATER POWER DEVELOPMENT
DAMS, STORAGE RESERVOIRS and OTHER HYDRAULIC STRUCTURES
STEAM PLANTS

EXAMINATION
REPORTS
ESTIMATES OF COST
DESIGNS
SPECIFICATIONS
VALUATIONS

H. S. TAYLOR
Consulting Engineer
Member Am. Soc. C. E.—Am. Soc. M. E.—Eng. Inst. Can.

PULP, PAPER AND FIBER MILLS
HYDRO-ELECTRIC AND STEAM POWER PLANTS
PLANS—SPECIFICATIONS—EVALUATIONS
REPORTS—CONSULTATIONS

Jefferson St. Arcade **Dayton, O.**
Guarantee Bldg. **Montreal, P. Q.**

J. H. WALLACE & COMPANY.
TEMPLE COURT BUILDING NEW YORK CITY, U.S.A.
CABLES, TRIPLEX, N.Y.

PULP PAPER AND POWER PLANTS

ENGINEERS & CHEMISTS
INDUSTRIAL DESIGN
PLANT IMPROVEMENT
LABORATORY TESTS

V. D. SIMONS
INDUSTRIAL ENGINEER

Pulp and Paper Mills, Hydro-Electric and Steam Power Plants, Electrification Paper Mill Properties.

435 No. Michigan Ave
CHICAGO, ILL.

GEORGE F. HARDY
M. AM. SOC. C. E. M. AM. SOC. M. E.
M. ENG. INST. CAN.

Mill Architect and Consulting Engineer

Langdon Building, 309 Broadway
New York

SPECIALTY
Paper, Pulp and Fibre Mills
Water Power Developments
Steam Power Plants
Plans and Specifications
Evaluations, Reports
Consultation

Cable Address:
"Hardistock"
A B C, 5th Edition
Bedford McNeill
Western Union
Bentley's

Pulp and Paper Mills, Power Plants, Chemical Plants

Engineering Design
Construction Supervision
Mechanical Equipment
Surveys
Investigations

Management
Process Development
Waste Utilization
Fuel Economy
Valuations

ARTHUR D. LITTLE, INC.,
Chemists : Engineers : Managers
30 CHARLES RIVER ROAD, CAMBRIDGE, MASS.

THE WATERBURY FELT CO.
Skaneateles Falls, N. Y.

FELTS AND JACKETS
Highest Quality—Prompt Service

Manufacturers of the
FAMOUS 5 X C JACKETS
FOR
FAST RUNNING MACHINES
They Satisfy!

LOCKPORT, N. Y. **NIAGARA FALLS, ONT.**

F. W. Roberts Manufacturing Co.

All Products Guaranteed to Suit You

STEEL SHELL BURRS
YELLOW JACKET SHOWER

Read the "ROBERTS IDEA"

Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, September 29, 1926.

During the past week the local chemical market was fairly active. A moderate amount of spot business was transacted and prices were maintained at recent levels, in most instances. Contract shipments continue to go forward in a satisfactory manner. In some quarters the opinion is expressed that only slight adjustments will be made in the contract quotations for the forthcoming year, which are expected to be announced shortly.

BLANC FIXE.—Inquiries for blanc fixe are more numerous than for some time and the market is very steady. Prices are being well maintained and shading is infrequent. The pulp is still selling at $56 a ton, in bulk, and the powder is quoted at from 4 cents to 4¼ cents a pound, in barrels, at works.

BLEACHING POWDER.—Contract shipments of bleaching powder are moving into consumption in a normal manner. Manufacturers of this product are greatly encouraged by the amount of inquiries being received and an active fall market is freely predicted. Bleaching powder is quoted at from $2 to $2.40 per 100 pounds, in large drums, at works, according to quantity.

CASEIN.—The casein market was rather quiet during the past week. The demand for the imported product was light and prices have declined half a cent. The domestic material is unchanged. Imported casein is now offered at from 16½ to 17 cents a pound, and domestic casein is quoted at from 16 to 18 cents a pound, all in bags.

CAUSTIC SODA.—While production of caustic soda has been on generous lines of late, the demand has expanded, and accumulations are being readily absorbed. Prices are being steadily maintained at former levels. Caustic soda is still selling at from $3.10 to $3.15 per 100 pounds, in large drums, at works. Spot car lots are offered at from $3.20 to $3.25 per 100 pounds.

CHINA CLAY.—Both imported and domestic paper makers' clay is in fairly good request. Shipments are being made steadily on outstanding contracts. Quotations are unchanged. Imported china clay is still offered at from $13 to $22 a ton, in bulk, ship side. Domestic washed clay is selling at from $8 to $9 a ton, at mine, and pulverized at $10 a ton.

CHLORINE.—Demand for chlorine is excellent and prices are holding up to schedule. Contract withdrawals are taking place in satisfactory volume and the movement shows no sign of slackening. Chlorine is quoted at 4 cents a pound, in tanks, or multi-unit cars, at works, on contract orders, while the spot price is from 4¼ to 4¼ cents a pound.

ROSIN.—In sympathy with the trend of the southern rosin market, prices locally are easier. Demand has fallen off, for the time being, although it is believed that this condition is only temporary. At the naval stores, the grades of rosin used in the paper mills are now offered at from $15 to $15.35 per 280 pounds, ex dock, in barrels.

SALT CAKE.—The tone of the salt cake market remains steady. Surplus stocks are scarce at the present time, and prices are very firm. Shipments of salt cake against contract are going forward in good volume, while the outlook for the future is quite promising. Salt cake is offered at from $18 to $20 a ton, in bulk, at works.

SODA ASH.—Conditions in the soda ash market are satisfactory, on the whole. Contract shipments are going forward at a good pace and prices are holding up to schedule very well. Contract quotations, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.25; in bags, $1.38; and in barrels, $1.63.

STARCH.—Demand for starch is being well maintained and quotations are practically unchanged. Supplies are moving into consumption in good volume. Accumulations are considered to be large enough to take care of current requirements. Special paper makers' starch is still quoted at $3.42 per 100 pounds, in bags, and at $3.59 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Consumption of sulphate of alumina is steadily expanding. The spot market is gradually improving and prices rule very steady. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.45, in bags, at works, in car lots. The iron free is selling at from $2 to $2.05 per 100 pounds, at works.

SULPHUR.—Trading in the sulphur market was fairly active during the past week. There was also a steady movement of supplies against standing contracts. Quotations were maintained at former levels. Sulphur is selling at from $18 to $19 a ton, in bulk, at mine, and at from $21 to $23 a ton, ship side.

TALC.—Steadiness prevailed in the talc market during the week and an improved demand was experienced from the paper mills. Prices are being well maintained and shading is infrequent. The quotations on domestic talc range from $16 to $18 a ton, at eastern mines, while French talc is selling at from $18 to $22 a ton, ship side.

LOS ANGELES TRADE

(*Continued from page 34*)

Center. The National Paper Products Company is affiliated with the Zellerbach Paper Company, which maintains several branches up and down the Pacific Coast.

The twenty-five acre site in Southgate ultimately will be used for a $1,500,000 factory according to officials of the Zellerbach company, with a daily manufacturing capacity of from 75 to 100 tons of box board and a total in and out tonnage of about two and one half times as much. It is planned to install a conversion plant to make fibre boxes as a feature of the development.

The unit which will be begun soon will measure 120,000 sq. ft., of which 50,000 ft. will be devoted to the production of folding boxes and the remainder to the making of corrugated board. It is planned to move the company's box making plant, now located at Pico and San Pedro streets, to the new plant as soon as it is ready.

Nashua Gummed Paper Co. Busy

Neil B. Sinclair, Pacific Coast sales manager for the Nashua Gummed and Coated Paper Company, Nashua, N. H., reports a flourishing demand for some of the paper specialties handled by him. Mr. Sinclair sells strictly to the jobber and is in consequence establishing a fine reputation for his concern in the far west.

Big Demand For Paper Napkins

The Hy-G Products Company, distributors of the Hy-G paper napkins and towels, located at 441 East Third street, reports a brisk demand for its products and says its business is increasing constantly.

Want to Establish Paper Mill in Texas

[FROM OUR REGULAR CORRESPONDENT]

San Antonio, Tex., September 28, 1926.—Considerable interest has been aroused in this city over a communication received here from Germany containing a proposal for the establishing of a paper factory in this vicinity. According to the communication, already 200 German families are ready to move into Texas and form a colony covering approximately 40,000 acres of land and eventually bringing 800 families from Germany to this State. The colony proposes to manufacture paper and feed products by a new process discovered by a scientist of the Hungarian Royal University who, with three engineers, is developing the process into a commercial basis.

According to the information received, this new paper is made from several agricultural products, principally corn, which provides the necessary elements for the paper and in addition leaves the by-products for feed and other similar products. The paper will be of both writing-paper quality and for press work. Definite information regarding this company is expected to be given out within a short time.